

From the North British Review.

1. *A Treatise on the Inhalation of the Vapor of Ether, &c.* By J. ROBINSON, Surgeon-Dentist, &c. London, 1847.
2. *Notes on the Inhalation of Sulphuric Ether, in the Practice of Midwifery.* By J. Y. SIMPSON, Professor of Midwifery in the University of Edinburgh. Edinburgh, 1847.
3. *The Medical Periodicals, passim.*

AT first sight, this subject may seem to lie beyond the strict range of our journal, and to belong rather to those periodicals which treat exclusively of physic and surgery. But a moment's reflection makes it very plain how this is a matter which touches all members of the human family alike; or, if there be any difference, patients are more interested than practitioners—the laity more than the profession—the mass more than the medical section of mankind. No doubt, it is a boon to the surgeon to know that he can achieve what he knows to be essential for his patient's welfare, without, at the same time, inflicting on him an instant's pain. He will be very thankful to find a fellow-being placid, and calm, and motionless, under an operation which used to cause much torture, as evinced too plainly by writhings, and shoutings, and groans. His hand is all the steadier; his head all the more cool and collected; his feelings are comparatively untouched; and his heart, all thankful, is incomparably at ease. But surely the boon is greater far to the victim—to the suffering portion of humanity. Injury and disease often require operations of dread severity; fearful in themselves, and still more fearful in anticipation. In war, the bravest hearts, who cared not for the foeman's steel, and scarce felt the wound it made, have yet shrunk back from the friendly knife which in kindness had to follow. In disease, the sternest minds, and the most possessed, have looked death steadily in the face, day by day, week by week, and month by month; they have reasoned calmly of that which they believed to be surely carrying them onward to their grave; and yet they have turned, trembling and appalled, from the thought of an operation which a turn of their malady may have rendered expedient or imperative. Many a wise, as well as many a bold man has refused to submit to what his own conviction told him was essential to his safety; and many a valuable life has thus, in one sense, been thrown away, which otherwise might have been saved, or at least prolonged. And why? Simply because, in the operations of surgery of a graver kind, there has hitherto been such cruel pain as frail humanity, even of the highest class, is fain to shrink from. We remember the case of a gallant admiral—one of the bravest hearts that ever beat, in a service whose men of every grade are, to a proverb, dauntless—who, in the opening of his distinguished career, had been engaged in cutting out an enemy's frigate. From the gunboat, he climbed up the ship's steep side, and, foremost of his crew, had reached the bulwarks, when, receiving a stunning blow, he fell backwards into his boat again, striking his back violently on the tholpin. Many years afterwards, a tumor had grown on the injured part; and at length, the ad-

miral—grey, and bent in years—found it advisable that this growth should be removed. The man that never feared death in its most appalling form, while in the discharge of duty, now shrank from the surgeon's knife; the removal, contemplated with a feeling almost akin to fear, was long deferred; and at length, half-stupefied by opium though he was, a most unsteady patient did he prove during the operation. Women—mothers—who, for their kindred, have been at any time ready to sacrifice their lives, by watching and privation, in loathsome and tainted chambers of infectious disease—have, when themselves become victims of that which they know requires a surgical operation, and which, without this, they are well assured, must miserably consume them away;—even these noble minds, resolute in the fear of death, have yet quailed under the fear of suffering; they have studiously concealed their malady from their nearest friends, and deliberately preferred the misery of a fatal, and unchecked, and ever-gnawing cancer, to the apprehended torture of an operation, temporary though it be. We repeat it; even the best portions of humanity have an instinctive dread and shrinking from the pain of deliberate cutting of the living flesh. And does it not concern us all, that, in God's good providence, a remedy has sprung up for this?—that now a fair prospect is afforded of even the most dreaded of these dire proceedings being performed during a happy unconsciousness of the patient! Not merely with little suffering, but absolutely with none.

Than the subject at the beginning of our page, we can conceive nothing more catholic;—it affects the whole human race. Even editors and critics must stoop to arrange themselves among the benefitted; and in this question may well say—confessing their humanity, and throwing aside for once the almost suprahuman obscurity in which they love to dwell—“*Homo sum; humani nihil a me alienum puto.*”

We do not propose to enter fully into the subject of Etherization, but shall content ourselves with little more than a narrative of the principal events connected with it; making also some observations regarding the application of the discovery, which it may be at once useful and interesting for the general public to know.

It has always been a leading object in practical surgery, to diminish as far as possible the amount of suffering during the manipulations of that art. Accordingly, in some operations, tight pressure has been made above the part to be cut, applied by a tourniquet, by bandaging, or by the powerful grasp of an assistant. Sometimes, but more frequently in obedience to the urgent request of the patient than of the operator's own free will, opium, or some other narcotic, has been given previously to the hour of operation, in the hope of producing thereby a comparative deadness to pain; always, however, with an imperfect and unsatisfactory result as to the object sought to be attained, and almost always with the effect of subsequent disadvantage accruing, in the form of headache, feverishness, or other general disorder. Each individual operation has had its details oftentimes considered and changed, in the hope of accelerating the speed

of operating, while safety might be retained; and many ingenious instruments have been invented with the like object in view; surgeons seeking in every way to arrive at due combination of the "*tuto et celeriter*;" always giving to the former the first place in importance, and yet, perhaps, pursuing the latter with a greater earnestness and perseverance. In this, it is gratifying to know that surgery has, of late years, made no inconsiderable advance. The operation for stone, for example, used to average many minutes in duration, now it seldom occupies above three or four; often it is completed in two; and, withal, the average mortality is found rather abated than otherwise; the search for the "*celeriter*" has been successful, and the "*tuto*" has been retained. In like manner, the old method of amputating by "*circular incision*" has been, in a great measure, superseded by the modern operation by "*flaps*," and the cutting procedure, in consequence, has been abridged of fully one half its period of duration, while better stumps are formed, and the casualties affecting life are at least as few. Still, the results of such attempts, however successful, have been but imperfect; pain has still been inflicted, with all its intensity unbroken; the saving has merely been as to the tortures actually endured whilst under the knife, and that not with reference to acuteness or amount, but only as to the term of duration. And furthermore, no slight evil may well be supposed to have occurred, in the temptation to hurry in operating, held out, more especially, to those surgeons whose duty led them to public exhibition of their professional skill. A false criterion of operative power was apt to be raised—not merely in the vulgar mind; the dexterity of the hand was apt to be estimated according to the rapidity of its movement; the judgment and tact of the head, which planned an operation, were apt to be gauged by the time occupied in performance; and, in consequence, the surgeon may not unfrequently have been urged, almost unconsciously, if not to precipitancy in the use of his knife, at least to an unwarrantable sacrifice of the "*tuto*" to the "*celeriter*"—in plain language, to a sacrifice of his patient's best interests in favor of his own precarious and ephemeral reputation. "If it were well done, when 't is done, then 't were well it were done quickly." But it were a poor economy, on the part of the patient, to obtain a moment's absolution from pain, at the cost of misadventure which may bring life into hazard, or which may entail weeks or months of protracted suffering. In a recent publication, Professor Syme has stated, in reference to a particular operation, "I have completed the operation in less than a minute, and on other occasions have found nearly half an hour requisite for the purpose. If all operators had paid as little regard to the time occupied, I believe that the unfavorable results on record would not have been so numerous as they are." And this, we doubt not, is just an indication of the right feeling which pervades all truly good surgeons, who, as operators, are usually rapid—but rapid because skilful, and rapid only when safe; and who well know that, in some procedures, attempted rapidity will not fail to prove injurious, and must ever be abstained from. Still, there is no doubt, the operative surgery of modern days is decidedly more rapid than that of the olden times, and, on the whole, fully as safe in its immediate results. In consequence, a real saving of pain *has* thus been achieved in favor of humanity.

And in another way has good progress been made

in this direction. It has been the pride of modern surgery, as it has been its aim, not to multiply instruments and the means of using them; not to enlarge the operative field, but to circumscribe it; not to expend blood and pain, but by gentler means to arrest disease, and remedy disaster. Joints are saved, and made supple again, which used to be amputated; growths are made to disappear by their own act, which used to be dug out or cut away; and accidental wounds are brought to heal more rapidly and more kindly, with less use of the probe, sewing-needle, and knife. The modern surgeon finds his mission to be "not to cut, but to cure."

By the skill and diligence of surgeons, then, and by the advance of improvement in their art, operations have been reduced in frequency, and shortened in performance. Still, however, they are almost everyday occurrences in each extensive practice; and, until within these few months, they were still inseparable from such suffering as even the bravest minds would fain recoil from.

"Pneumatic medicine," as it was called, was in vogue at the end of last century; that is, the treatment of disease by the inhalation of gases or vapors. The names of Drs. Beddoes, Thornton, and Pearson, are prominently associated with this; and it is well known that Sir Humphry Davy, in his early years, repeatedly risked his life in recklessly inhaling gases which are now ascertained to be poisonous. His experiments were not without their fruit. Advances in the general science of chemistry were attained; and, as will afterwards be shown, a very near approach to the present discovery was also made. Indeed, a very fair question may be raised, as to whether Sir Humphry be not actually entitled to rank as the discoverer of what has been termed "*the Letheon*"—or, at least, of the system of "*Letheonizing*."

Dr. Pearson, in 1795, recommends the inhaled vapor of sulphuric ether as "remarkably serviceable in phthisical cases. It abates the hectic fever, checks the sweats, removes the dyspnoa, and greatly improves the smell, color, and other qualities of the expectorated matter \* \* \* Patients who have inhaled it two or three times, find it so grateful to their feelings that they are disposed to have recourse to it too often, and cannot readily be prevailed upon to lay it aside when it is no longer necessary." His mode of applying it was to pour "one or two teaspoonfuls of ether into a tea saucer, holding it to the mouth, and drawing in the vapor with the breath;" continuing the inhalation till the saucer became dry; and repeating it "two or three times a day, or oftener if necessary." His ether, too, was duly rectified. The best having been got, "lest it should contain any loose acid, it is advisable to put a little alkaline salt into the bottle in which it is kept, and to shake them together now and then." And he was not content with using ether alone. He "impregnated it with musk, camphor, opium, assafetida, and the like;" and squill seemed a favorite addition with him—for, says he, "the finer particles of the squill applied to the lungs in this manner, along with the vapor of ether, gently stimulate the secreting surfaces of the bronchia, and promote the mucous discharge; and if applied in sufficient quantity, produce sickness, which takes off the spasm, and is otherwise serviceable in such (asthmatic) cases."

Nysten, in 1815, published a strong recommendation of etherial inhalation as an anodyne, especially in pulmonary complaints; and described suitable inhaling apparatus.

In Brande's *Journal of Science and the Arts*, 1818, an author writes "on the effects of inhaling the vapor of sulphuric ether," showing how it may be conveniently managed, what risks may be expected, and how these may be avoided.

The medical use of gaseous inhalation, however, fell into desuetude. The profession let it slip; empiricism took it up; and between the neglect of science, and the favor of quackery, it lapsed not only into disuse, but also into disrepute.

And yet it has been reserved for the simple inhalation of a gas—a revival of the erewhile forgotten and despised "pneumatic medicine,"—to achieve in surgery that for which surgeons have for centuries labored, and labored in vain.

Sulphuric ether—a subtle fluid, obtained by the action of concentrated sulphuric acid on rectified spirit, colorless, very volatile, pungent in taste, and of a penetrating odor—has long been used in medicine; narcotic, when taken in large doses, either by the mouth or by inhalation; in smaller doses, stimulant, antispasmodic, and carminative. "In hysteria, asthma, palpitation, gastralgia, nervous colic, and the like, it is an invaluable remedy, especially when united with opium."\* Many a time has the vapor of ether been inhaled for the relief of oppressed lungs; many a time has the sought relief been thus obtained; and just so many times has the discovery of the wonderful anodyne properties of this gas, as affecting all bodily suffering, been brushed past and overlooked. Philosophers may often be likened to men diving into deep waters in search of what is floating on the surface, and against which, as they emerge, they may often almost brush their cheek. Medical philosophers were busy seeking to alleviate pain; prosecuting search after search, and devising scheme after scheme; and yet were in the daily or at least familiar use of what, if pushed only a little further, would have gained the end in view. And something less than medical philosophers had gone a step nearer the discovery. Certain medical chrysallis, commonly called apothecary shop-boys, have long been in the habit of testing each new comer to their sphere of labor, by his power of sustaining the vapor of ether. The novice may have passed an inductive examination satisfactorily as to general acquirements, the indenture may have been duly signed and lodged, the fee may have been duly paid; the apron may have been donned, and a place at the counter appropriated; but an ordeal had still to be passed through. In some remote corner of the shop, and at some lone hour, his impish brethren of the craft resolve themselves into a mysterious tribunal, to elicit his grade of manliness; they form a circle round him, and, holding to his mouth and nose a sponge, handkerchief, or towel, saturated with ether, through which he must breathe, they watch the effects. If he soon faint and fall, he is placed low in the list, as freeman of the shop; but if he long resist the vapor, he rises in estimation, and at once has assigned to him a high place among his compeers. It is odd that such tricksy atoms of humanity never thought of pinching, puncturing, or cauterizing their hapless victims that fell and lay in a swoon. If they had, some one of them might have proved the lucky stumbler on the strangely anodyne properties of what they, as well as their betters, had so long regarded, in full doses, as a mere narcotic.

An old gentleman, too, was near it, some forty years ago.\* He had discovered that the fumes of ether could lull him into forgetfulness of the pains and discomforts of a bustling and a checkered life. He was a man of research, in his way; curious in beds, and baths, and professing to cure disease better than his fellows. But he was loose in principle, as well as weak in science, and no doubt, most deservedly, had many roughnesses in life which he could wish to rub away. His mode was this. Obtaining an ounce or two of ether, he leisurely sniffed up its vapor, according to the plan of Dr. Pearson; sitting softly the while, and manifestly enjoying a time of calmness and repose. And, on being interrogated, he was in the habit of answering, "soothing, sir, soothing to an immeasurable degree." In this placebo for the cares of life, he was in the habit of indulging many times a day; and again, it is to be regretted that some experimental pinching or puncturing had not been applied, in his listless moments—the more especially as there seems good reason to believe that no fitter subject could well have been got for such experimenting, according to the old adage, of "*in corpore vili*," &c. He had discovered that the fumes of ether could relieve, temporarily, from the pains of a mind ill at ease; but he was not deemed worthy of knowing that it could still more wonderfully assuage the body's worst suffering.

This discovery Providence has, in inscrutable wisdom, held back till the present day; and with its divulgence the names of two Americans are prominently associated, Doctors Jackson and Morton, the one a physician and chemist, the other a dentist, in Boston. To the former, the chief merit of the discovery seemed due, the latter having been but auxiliary to the testing by actual experiment. On the 13th of November, 1846, Dr. Jackson writes to the French Academy of Sciences, stating that he wished to communicate to that body a discovery which he had made, of much importance, as a means of relieving suffering humanity, and very valuable to the art of surgery. Five or six years before, he had observed that inhalation of the vapor of pure sulphuric ether had the power of inducing a peculiar state of insensibility. He had inhaled it himself, partly for the mere purpose of experiment, and partly for the relief of a very unpleasant affection of the chest, which had followed the inhalation of chlorine. Struck with the thought that this trance or insensibility might be turned to a good account, he advised Mr. Morton to make trial of it in the pulling of teeth. This Mr. Morton was not slow to do, and had the satisfaction, by means of the ether, of pulling teeth without pain, and of finding no unpleasant consequences attendant on his experiments. Mr. Morton subsequently, at the request of Dr. Jackson, proceeded to the public hospital of Massachusetts, and there administered the vapor to a patient about to undergo a painful surgical operation; and the result was again prosperous—no pain during the operation, and a good recovery. Then came further trials in the hospital; fast enough, and all successful—no pain, and "the recoveries remarkably good, apparently on account of no shock having been sustained by the nervous system."

On the 28th of November, Dr. Bigelow writes to his friend Dr. Boott, in London, announcing the "new anodyne process," and giving instances of its success.

\* Christison.

\* *Lancet*, No. 1223, p. 164.

On the 14th of December, Dr. Boott sends Dr. Bigelow's letter to Mr. Liston, naturally anxious to make so important a communication without loss of time to one so preëminent in the operative department of surgery. And that distinguished surgeon, worthy of the confidence reposed in him, speedily put the matter to test in the hospital of University College. His success was most complete, on the 21st of December.

On the morning of the 23rd of December, his former pupil, Professor Miller of Edinburgh, was not a little surprised, doubtless, to receive the following epistle, which, having obtained, we venture to make public, availing ourselves of the permission of one of the parties at least. It is very characteristic of the writer, dashed off, in hurry and excitement, and showing a fine generous enthusiasm; moreover, it may be regarded with something of historic interest, under the circumstances. The writer will, we hope, pardon us for the liberty we take with a private communication, which bears the form, indeed, rather of a despatch than of an ordinary letter. It is verbatim, as follows:—

“ HURRAH !

“ Rejoice ! Mesmerism, and its professors, have met with a ‘ heavy blow, and great discouragement.’ An American dentist has used ether, (inhalation of it,) to destroy sensation in his operations, and the plan has succeeded in the hands of Warren, Hayward, and others, in Boston. Yesterday, I amputated a thigh, and removed, by evulsion, *both* sides of the great toe nail, without the patient’s being aware of what was doing, so far as regards pain. The amputation-man heard, he says, what we said, and was conscious, but felt neither the pain of the incisions, nor that of tying the vessels. In short, he had no sensation of pain in the operating theatre. I mean to use it to day, in a case of stone. In six months no operation will be performed without this previous preparation.\* It must be carefully set about. The ether must be washed, and purified of its sulphureous acid and alcohol. Shall I desire Squire, a most capital and ingenious chemist, to send you a tool for the purpose ? It is only the bottom of Nooth’s apparatus, with a sort of funnel above, with bits of sponge, and, at the other hole, a flexible tube. Rejoice !

“ Thine always, “ R. L.”

This was read by Professor Miller to his class, within an hour after its receipt; and a somewhat similar announcement was also made by Professor Syne, in the after part of the day. A few days afterwards Professor Simpson had occasion to visit London; and, witnessing the effects of ether in hospital practice, obtained the best instrument for inhalation he could then procure. This apparatus, speedily after his return to Edinburgh, was put to the test in an amputation performed by Dr. Duncan in the royal infirmary of that city, and proved entirely successful; the operation having been completed without the infliction of any pain. In due time Mr. Liston supplied Professor Miller with the promised “ tool;” and that apparatus also proved eminently successful in sundry cases in the infirmary, astonishing both patient and practitioner. Professor Simpson was, with accustomed energy,

not slow to prosecute the discovery in connexion with his own peculiar department; still with success. Professor Syme seemed less eager than his colleagues to lend confidence to the ether, and his first public trials were unsatisfactory. On the use of efficient apparatus, however, he too became a painless operator. Instrument makers, medical practitioners, and medical students, seemed struck with a fever of invention as to inhaling apparatus; in rapid succession many varieties were constructed and tried; some with unsatisfactory results, but the great majority all succeeding in the main object—procuring the forgetfulness of pain. From the metropolis the news quickly spread throughout the provinces; for the papers of the day, not unnaturally, had lent their power towards the dissemination of the good news for humanity; and in Glasgow, Dundee, Aberdeen, Inverness—by this time, doubtless throughout all Scotland—the truth of the at first scarcely believed reports became speedily attested by the voice of actual experience. Already, by many hundreds of cases, the efficiency of inhaled ether in averting or subduing pain, its applicability to the majority of cases for operation, and the safety with which it may, in proper hands, be administered, are facts—assailed, but not overthrown.

Thus went the narrative of the discovery, up to the beginning of March. Then, however, a little new light dawned upon the subject. A Mr. Horace Wells, of Connecticut, United States, dentist, is announced as having practised letheonizing since October, 1844; beginning upon himself, using both nitrous oxide and sulphuric ether in his inhalations, and ultimately preferring the former. At the first it excited, as “ the laughing gas” is well known to do; but after some time a thoroughly sedative effect was induced, less transient than that of ether. He did not stumble on the thing by accident, but was led to it by a process of reasoning, as he thus explains:—

“ Reasoning from analogy, I was led to believe that surgical operations might be performed without pain, by the fact that an individual when much excited from ordinary causes may receive severe wounds without manifesting the least pain; as, for instance, the man who is engaged in combat may have a limb severed from his body, after which he testifies that it was attended with no pain at the time; and so the man who is intoxicated with spirituous liquor may be treated severely without his manifesting pain, and his frame seems in this state to be more tenacious of life than under ordinary circumstances. By these facts I was led to inquire if the same result would not follow by the inhalation of some exhilarating gas, the effects of which would pass off immediately, leaving the system none the worse for its use. I accordingly procured some nitrous oxide gas, resolving to make the first experiment on myself by having a tooth extracted, which was done without any painful sensations. I then performed the same operation for twelve or fifteen others, with the like results; this was in November, 1844.”

His discovery he had no wish to keep concealed, or to cover by a patent. He at once disclosed it to the members of the profession with whom he came in contact, and, amongst others, to Drs. Jackson and Morton; making a journey to Boston for the express purpose. Dr. Warren of that city made trial of the experiment; but somehow, his first attempts failed, and he desisted. Drs. Jackson and Morton professed themselves incredulous; Mr. Wells fell sick; and so the discovery lay dormant

\* Of course, this is not to be considered as Mr. Liston’s deliberate opinion; but just the first flush of enthusiasm, at once natural and becoming, in the circumstances.

for a while. Drs. Jackson and Morton, however, though incredulous, were not oblivious; they seem to have been brooding over the matter; and at length emerged from obscurity in the borrowed light of their more single-minded countryman. What degree of *credit* attaches to these gentlemen, we shall leave others to judge. The first mention of their names in this country was associated with very qualified praise, on account of their seeking to trammel, for their own pecuniary interests, a discovery which plainly interested all mankind, and which was declared to have emanated from a liberal and enlightened profession, the members of which—in this country, at least—are not in the habit of so “protecting” their inventions and discoveries which affect the life and death of their fellow-men. That praise will be still more qualified now, when it is understood that what they sought to patent, was not their own, but had been filched from a professional brother; one who had been generous enough to make it known to them, and who had wished to publish it to the wide world.

Has regret ever arisen within the breast of any Briton, that so important a discovery had not originated in his own land? Or are our transatlantic brethren self-elated, at so large a boon in favor of humanity having come from the New World? Surely both feelings, if they exist, will receive a healthful chastening, by the reflection how untowardly the boon has been ushered into operation. Really, gentlemen, it is too bad. Must you have both a patent and a piracy? *Proh pudor!*

But, after all, have we, in this country, no claim to urge? In Sir Humphry Davy may we not have as good a claimant as Mr. Horace Wells? Sir Humphry, we know, half poisoned himself on more than one occasion, by his personal investigations into the effects of various gases on the human lungs; and it were unpleasant to think that nothing should have come out of his scientific and perilous experiments, while so much may have seemed to flow from those of the obscure transatlantic. Fortunately for our peace of mind, however, Sir Humphry seems really and truly to have made the *discovery*. In his own person he found that nitrous oxide inhalation removed headache, and greatly assuaged the pain of what, in such a philosopher, may truly be regarded as a very serious and important operation—namely, the cutting of a *wisdom* tooth. And in his works, edited by Dr. John Davy, is the following passage:—“As nitrous oxide, in its extensive operation, appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place.”\* Here is the germ of the whole matter. It is not too much to suppose that Mr. Wells, who all along seems to have preferred nitrous oxide to ether, may have derived his first inkling of the applicability of this gas to surgery from the passage we have just quoted. And, consequently, it were no great stretch of propriety to place the name of Davy on at least quite as high a level in this matter as that of Wells. Sir Humphry published the discovery in 1800; Mr. Wells practised it in 1844. And Drs. Jackson and Morton acknowledged themselves to have been “early impressed with the remarks of Davy, concerning the remedial agency of gaseous matters.”

But nitrous oxide is not *the* agent. Ether is plainly preferable; less troublesome and expensive

in preparation, less liable to dangerous impurity, and more easily applied. It was a Dr. Marcy who first suggested to Mr. Wells the use of ether, instead of nitrous oxide; about the time of Mr. Wells’ *first* experiments—“during the same month.” Now, what share in the discovery has Dr. Marcy—Dr. E. E. Marcy of New York! Not much we suspect; except just to make the matter more complex: for he himself says, “Upon reflection and more full discussion of the matter, I advised Mr. Wells to abandon the use of the ether, and confine himself to the exhilarating gas.”

Again, we learn that a Dr. Hickman, an Englishman, proposed to the Academy of Medicine in Paris, in the time of Charles X., that patients should be rendered insensible to pain, during surgical operations, by “*inhalations*.” What these “*inhalations*” were, we are not fully aware. They may have been etherial. But we care not to prosecute this subject. To America let the credit be awarded of the first *announcement* of etherization in surgery. To Dr. Morton we are certainly indebted for its first *practical application*.

We need not stop here to describe the various forms of apparatus employed; nor, among so many, shall we attempt to decide the question of comparative merit. Most are efficient; some are strikingly so; and the simplest is the best. To children the vapor is efficiently enough applied, by laying over the mouth and nostrils a cambric handkerchief dipped in ether—a method long ago recommended by Dr. Pearson. We shall rather attempt to describe the effects, when suitably inhaled. The first mouthful or two is felt to be harsh, and unpleasantly pungent; but, in continuance of inhalation, that feeling gradually disappears, and the sensation becomes rather grateful than otherwise—sometimes intensely so, as in the case of the nitrous oxide gas, the inhaler obstinately and violently refusing to forego his delectation, if attempts be made to take the tube from him. Coughing is not always produced; but more frequently than not; and, in some cases, it proves so distressing as to impose on the practitioner great difficulty in proceeding, even with the best assistance on the part of the patient. In general, however, by letting on the full supply of ether gradually, the coughing proves slight, and speedily ceases. Sometimes a profuse discharge of saliva takes place from the mouth; in almost all cases the secretion from the lining membrane of the windpipe and lungs seems to be very considerably increased; and, from this latter cause, a cough with expectoration may come on, during the latter stage of a prolonged inhalation, quite independently of any direct irritation by the pungency of the ether. In the course of some time—varying from one to twenty minutes, but usually within two or three minutes, when the inhalation is duly conducted from the first—the patient shows signs of a departure from his ordinary condition. His face grows pale and leaden; sometimes with a livid congestion about the mouth and nose; his eyes are less brisk in their movements, and their glance is less keen; the eyelids move sluggishly over the eyeballs, and tend to droop; the hands and feet grow cold, and so do the legs and arms by and by; bent positions of the limbs gradually relax themselves; the patient breathes more slowly and fully; his chest is seen to take in large supplies at each inspiration, and his cheeks blow like a bellows; if previously seated, the trunk of the body now falls back; if previously recumbent, a change may be observed indicative of still further relaxation. The

pulse has been all along becoming more and more rapid in its beats, it is now very frequent; and soon it may run away to nothing, almost ceasing to be felt. The eyelids are now motionless; on elevating the upper one, it falls slowly down again, evidently under no control of muscle. The pupil of the eye began to dilate early; and the dilatation has kept pace with the progress of inhalation. The eyeball is now glassy, fixed, often turned upwards, and thoroughly "void of speculation." Then is the evidence of full etherization complete; and the operation may be proceeded with.

Such is a sketch of the ordinary effects as observed; but there is great variety. Sometimes the pupils are but slightly dilated, if at all; and sometimes the pulse, too, is slow to alter. Sometimes the patient withdraws the tube from time to time, to tell his feelings with great volubility and energy. Sometimes, but rarely, he expresses a strong dislike to it, and is with difficulty coaxed to resume its use. Sometimes he mutters through the tube, sometimes incoherently, sometimes sanely enough, in reference to circumstances which he observes. Sometimes he laughs immoderately, as if under the influence of nitrous oxide gas; and yet without recollection of any ludicrous idea after recovery. Sometimes he twists his limbs about, and sometimes he rolls his head from side to side, with a wild motion of his eye, and with a stupid yet strong expression of inquiry in his gaze. Sometimes he takes to low moaning or whining through the tube; more especially if he has been much agitated by previous apprehension. Sometimes he comes to breathe more heavily, and with more snorting noise than is quite agreeable. Sometimes a tendency to convulsions manifests itself, requiring instant disuse of the inhalation.

Supposing the trance complete, the phenomena educed by the operation vary. In general the patient remains quiet and motionless, as if inanimate; the muscles often quivering slightly, however, at each play of the knife, as if by the mere physiological stimulus which their contractility receives; and knitting of the brows, occasional or fixed, is extremely common; giving an expression, by frowning, rather of annoyance than of pain. Sometimes there is slight shrinking of the part from the knife, the patient seeming to make some little effort to move it away. Sometimes the part is violently contorted, requiring more than the usual complement of assistants to restrain it. Sometimes the patient gives sundry abrupt loud exclamations, as if in pain; sometimes he moans and breathes hard; sometimes, though rarely, he roars lustily. And all this may happen without any sensation, or at least without any subsequent remembrance of pain.

The effects, as indicated by the patient's own recollection, are also very various. In general they are somewhat as follows:—A pleasing sense of soothing succeeds the first irksomeness of the pungent vapor—a soothing of both mind and body. Ringing in the ears takes place, with some confusion of sight and intellectual perception. The limbs are felt cold and powerless; the hands and feet first, then the knees; and the feeling is as if these parts had ceased to be peculiar property, and dropped away. This sensation may gradually creep over the whole frame; the patient becoming, in more senses than one, truly etherealized; reduced to the condition of no body and all soul. The objects around are either lost sight of or strangely perverted; fancied shadows fit before the eyes, and then a dream sets in—sometimes calm and placid, some-

times active and bustling, sometimes very pleasurable, sometimes frightful as a nightmare. Emerging, the figures and scenes shift rapidly, and grow fainter and fainter; present objects are caught by the eye once more, the ringing of the ears is heard again, consciousness and self-control return, a tendency to excited talking is very manifest, movement is unsteady, and, both in mind and body, very unequivocal signs of intoxication are declared. In plain language, as in plain fact—there is no disguising it—the patient is drunk. The tipsiness, however, is of a light and airy kind; very pure, very pleasant, and very passing, and, when gone, leaving very little trace behind. If the ether be good, "there is no headache in a gallon of it."

Sometimes the dream is exquisitely charming, and the patient seems passed into another and a better world. Sometimes the opposite state obtains, the patient betraying manifest uneasiness while in the trance, by restless, staring, anguished eyeballs, by groaning, and by wrestling movements of the body. And these are not loath to emerge from the effects of the drug, while the former part with them grudgingly. One poor girl, we well remember, had struggled hard during an amputation, yet felt no pain; and, on coming to herself, thankfulness was expressed in every feature, as well as by her blithe tongue, for she "thocht the deil had a grip o' her a' the time." Sometimes the dreamer is falling from a great height rapidly, down and down into some unfathomable abyss. Very often the dream is connected with the operation—may be said to be the operation embellished and disguised, done into poetry, and all without pain. Sometimes again, the dream is the most opposite thing possible to the operation; the otherwise the most painful things may be doing, and all the while the patient, without swerving a hair's breadth, may be grinning and nodding, and winking, and chuckling, and making various nautical-looking observations, with his fingers on his nose, industriously endeavoring to convey to the bystanders some notion of the exquisite treat of which he himself is then in the full enjoyment. Sometimes an obscure perception of something being done to the part, suggests, as if by association, the idea of accidents and injuries there of another kind. Sometimes the dream is warlike; personal to the dreamer; or of bygone days, implicating Napoleon, or Soult, or Wellington; and the crack of tooth-pulling has sometimes passed off as the din of ordnance. Sometimes it is a contention with unearthly things, a tugging or battling with gnomes and spirits of an evil men, victory swaying now one way and now the other. Sometimes, in youth, the dream has been "all fun;" and the dreamer has been anxious to be back into the midst of his pleasant pastime again, even at the cost of another tooth-drawing. The patient, if a wanderer, and then in a strange land, may dream pleasantly of home; "she had been home, it was beautiful, and she had been gone a month." So said one poor woman in the midst of what, without the ether, would have been agony. Sometimes the dream is of drowning; a gushing in the ears, a choking, and a sense of being lost, without pain or struggle or effort to save one's self; a rapid, smooth, and pleasing descent beneath the waters of deep oblivion. Sometimes the complex circumstantial details of years, as in other dreams, are condensed into one lucid glance; the events of early youth have seemed compressed into a circle. Sometimes the dream passes steadily on to completion, sometimes it is abruptly closed by some critical procedure on the part of the operator

—the extraction of a tooth, with a sudden wrench, for example. Some go “with their uncle to Gravesend;” some “have been they don’t know where; all they know is, they felt nothing.”

Sometimes, too, the dreaming has connexion with previous habits and tendencies. A soldier dreams of guns and bayonets, and strife, and clamor; a sailor, of ships, and storms, and grog; an Irishman of whiskey and shillelaghs, and a “skrimmagem;” a boy, of marbles, tops, and “lots of fun;” a mother, of home and children; a girl, of gala days and finery—“bonny, very bonny,” one kept ever saying, with her eyes fixed and straining, evidently on a print or bonnet. A tippler fancies he is in the grog-shop, and there he may enjoy himself rarely—or he may dream “his wife came to fetch him.” Quarrelsome men grow pugilistic, and coats may be doffed with appropriate accompaniment of word and action. Young men, having some one in their list of female acquaintance dearer than the rest, grow active lovers, and in lone walks, earnest conversations, or soft whisperings, seem to make rare progress in their suit. The swearing and dissolute may indulge in oaths and profane jests. The man of fervent piety, who is habitually looking heavenward, may not only suppose himself translated to the realms of bliss, but may take part in imagined exercises there. We have seen a patient thus employed immediately after a painful operation; four verses of a psalm were sung by him very loudly, with his eyes fixed, his body in a tremor, and intense fervor shown in every movement; he would not be interrupted, and could scarcely be prevailed on to leave the operation-room, seeing that he found himself so wonderfully happy there; he said he had been in Heaven, and had seen his Saviour; on reaching his bed, he fell on his knees and was rapt in prayer. Not always however, is the dream consistent with the character. For we have heard, among other instances, of one young simpering and innocent damsel, who, addressing a most amiable and excellent dentist, knitting her brows into something more than a frown, clenching her fist, and scowling defiance, vowed in the voice of a Stentor, that if he ventured near her with his profane touch, “big blackguard, as he was, she should certainly knock him down”—doing him, no doubt, some grievous bodily harm. And staid, demure, elderly gentlemen—lawyers too—have, in most abandoned gayety, insisted on the operator forthwith joining them in a joyous “Polka.”

When the illusion is very pleasant the dreamer almost always evinces a strong aversion to being interrupted; all questioning he deems impertinent, and he answers snappishly and in monosyllables, if at all. It is no uncommon thing for him to say that “an answer will be given *to-morrow*;” plainly implying that he is busy, well employed, and will not be disturbed. On coming out of the trance, whether this have been pleasurable or not, hysterical crying is very common in the young, and especially in the female. Grown men, however, are not exempt from this frailty. On recovering from their unconsciousness, and for the first time beholding a raw stump, where a leg or thigh had been, even they are very apt to lapse into most unsentimental blubbering.

The effects, as already said, bear a strong resemblance to those of excess in strong drink. Sometimes the patient seems to be made aware of this, by the sensations which are induced in the early period of inhalation. “You’ll have me drunk!” cried one; “Oh, you blackguard! I know what

you are;” evidently supposing that he had fallen into loose society, and that his companions had a design on him. But it is in the state of emergence that the intoxication shows most. The eye, mouth, general expression of features, the walk, articulation, and pantomime, are all those of the tippler. He sways as he tries to stand, and reels as he walks; is garrulous and sprightly, often effectively humorous; and his leer and gesture are meant to be diverting. Often he insists on shaking hands with all and sundry; often, as already stated, he grows lachrymose, like one who in Scottish phrase, might be termed “greetin’ fou.” The unsteadiness of gait, and lightness of head, sometimes have an inconvenient length of duration. One lady we have heard of, who, leaving the dentist too soon, had to grope her way along the railing of the street, in noonday, and ran no slight risk of losing all reputation for sobriety. Sickness, too, is not uncommon; very like that of a debauch. And next day, though it brings not its headache, brings some uncomfortable feeling in the interior; with a strong desire, usually for more of the deluding vapor. This desire for more, indeed, occurs at two periods; immediately after the affair is over, just as a man not fully drunk, but only excited, is eager to have “one glass more;” and, again, next day, just as a man drunk over night seeks for “a hair of the dog that bit him.” In Dr. Pearson’s time it was the same, though with him the ether was not pushed to unconsciousness; for, in the passage formerly quoted, we find him complaining that he found difficulty in preventing his patients who had once tasted the sweets of ether, from recurring to it far too frequently. Patients themselves, too, liken it to drink; they call for “more grog,” and declare it to be “glorious,” “good stuff, better than pop.”

In connexion with this point, it is interesting to note that there are not a few well authenticated examples on record, of the most severe operations having been performed, during ordinary extreme intoxication, without any sign of pain being evinced by the patient during the operation, and without any recollection after return to sobriety of pain having been endured. Dr. Boot says—

“Dr. Sharpey has mentioned to me the case of an Irishman, part of whose face was eaten by a pig while he was lying dead drunk on the ground, and a wax model of the mutilated face is, or at least was, preserved in 1833 in the Museum of the Park Street School, Dublin.

“Professor Quain also has mentioned an instance, where a man, in a state of intoxication, fell from a coach, and had a shattered leg amputated; on coming to himself, he affirmed that he knew nothing either of the accident or the operation.”

And Mr. Lawrence says—

“Many years ago, a middle-aged woman was brought into St. Bartholomew’s, drunk, with a compound fracture and other serious injury of the leg, requiring amputation. Having reflected on the circumstances, I could see no reason why the state of intoxication should prevent the performance of an operation absolutely necessary, and I accordingly removed the limb at once above the knee in the ward. The gentlemen present and myself were perfectly satisfied that the patient was unconscious of the proceeding, though being subsequently jeered on the subject by some of her fellow-patients, she contended that she knew what was done at the time, but did not feel pain.”

From what has been stated, it surely will not be objected that the use of ether is objectionable, on

the score of a breach of morals. In medical practice, wine, whiskey, and brandy are every day given (even for long continuance) in such doses as must prove more or less intoxicating; in low fevers, for example, or in threatened sinking after severe shocks by injury. And here the end—the saving of life—is held to justify the means. Were such means employed as a mere experiment, or not hopeful of successful issue, their use would assume more than a doubtful character. In the time of the cholera, when it raged in its first onset among us, a late physician in Edinburgh, attached to one of the hospitals, experimented largely in the injection of saline matters into the veins; and with no indifferent success. One old man resisted the ordinary injection; and in a reckless moment it was resolved to inject whiskey into the veins instead. The effect was electrical. The man—before cold, and clammy, and blue, without voice, or pulse, or power of motion—rose up in bed, a living corpse; fancied he was in a change-house; called loudly for more drink; trolled merry songs; and, after a few minutes of ghastly gayety, fell back, and sank again, and died. This was faulty; and, if repeated, would have been flagitious; but the use of ether surely comes within quite another category—and that so obviously as to require no illustration.

The duration of the ether's influence is an important matter. It is brief; and yet it is odd, that the ether itself seems to remain long in the system: being plainly, and even offensively, felt in the breath, not merely for hours, but even positively for days, after protracted inhalation.\* The full effect seldom lasts above a few minutes; time enough for the performance of some operations; such as that of tooth-drawing. When more protracted procedure is contemplated—as in amputation, stone, rupture, removal of tumors, &c.—the inhalation is proceeded with during the operation, at what is steaming is termed “half speed.” The ordinary signs having evinced attainment of the full effect, the operation is begun; and then the inhalation may be for a few moments discontinued, to be afterwards renewed; or, what is better, the mouth-piece is kept continuously applied, with the valve in the tube, for entrance of atmospheric air, either partially or wholly open, so as to dilute the vapor. And if at any time the patient show signs of prematurely returning consciousness, the valve is shut, and the full power of ether restored; the patient being made to breathe much or little of the vapor, according to the effects observed.

At first, it may seem that this brief duration of the ether's influence is a disadvantage. The operator soon learns, however, that it is the contrary. Prolonged duration is readily within his power, by continued inhalation; and much of comfort and safety resides in the fact of the effect being transient. The manageability of the ether is not its least virtue. Were the period of duration ordinarily less brief, the inhaler would be a dangerous instrument, even in the hands of the skilful and prudent. But, as it is, in the hands of the duly qualified it seems perfectly safe. Repeatedly have we observed unpleasant effects beginning to show themselves, during an operation; and, to prevent or remove them, it was only necessary to discontinue the inhalation.

\*The rapidity with which the ether pervades the whole system is also well shown, by amputated parts retaining a strong flavor of ether, even for many days after removal; although perhaps not more than two or three minutes had been spent in inhalation previous to the making of the incisions.

There was no necessity to fly hither and thither in search of antidotes or restoratives, or to annoy the patient and interrupt the operator by the administration of them. It was enough to cease to administer the ether. Repeatedly have we seen an operation begun, without any sign of pain; by and some wincing and moaning came; the ether was let on;—a lull followed, the limb becoming passive and deadlike as at first—in more senses than one, the patient “breathed again;” once more sensation revived, and again it was lulled asleep; and so, several times in succession, until all was safely and painlessly completed. Repeatedly have we seen the tedious process of stitching a wound illustrate this manageability of the ether's influence; one stitch accompanied with some sign of pain, the next as if placed in a dead part; and so on in varying succession, just according to the cessation or continuation of the ether's administration.

Sometimes, however, the effect is not transient; a heavy stupor remaining, with small pulse, perhaps, and an unpleasant expression of countenance. Cold water, dashed on the face, or a current of cold air applied to it, are good restoratives. Indeed, their power of bringing the patient out of the trance is often exhibited unintentionally, and inconveniently, during the operation. If a wound be sponged with cold water, for example, the patient who had borne cutting without a wince, will often complain of the cold lustily. One victim of a severe operation, when asked if she felt any pain, said she “felt that window”—which, happening to be open, had to be shut. The internal restoratives are wine, spirits, or ammonia; the last probably, to be preferred. Should respiration and circulation still flag, heat to the surface, friction of the chest, and ammoniated stimulation of the nostrils, will naturally be resorted to. If opportunity serve, oxygen gas may be inhaled, to arterialize the blood; it being supposed that etherization, when extreme, tends to evil, by sending venous blood through the general circulation.

When the patient does awake fully to consciousness, it may be supposed that he awakes to much misery, because to much pain. But it is not so. Not unfrequently, every sense is fully restored except the sense of pain. The patient sits up, talks rationally and calmly, is aware of every circumstance, knows of his wound, by seeing and hearing of it, and yet feels no pain; the smarting of a raw wound is often averted for some hours in this way; and when it does supervene at length, there is good reason to believe that in many cases it comes in a mitigated form. Often the patient sobs and cries, immediately or soon after return to consciousness—a state resembling hysteria, or else very like the maudlin grief of a drunk man; but such tears are no sign of suffering; on the contrary, they are not unfrequently the offspring of dreamy joy and gratitude.

For the successful administration of ether, certain things are very essential. The instrument must be suitable, and in good working order; and, especially, there must be sufficient width of bore to admit of a free draught for the trachea. The ether must be strong and pure; washed with water, to remove any acid that might remain, and which would cause irritation to the lungs and fauces; afterwards decanted from the water, and distilled over chloride of calcium. A mixture of chloric ether with the sulphuric has been tried, but with unsatisfactory results; the mixture proved more grateful to the patient at the time of inhalation, but

the stupefying result was longer of being produced, and the after effects were not only protracted, but disagreeable. There was a loss of power; and, as with many compound things, what was pleasant to the taste, at first, became bitter afterwards. The patient should be comfortably and conveniently arranged: he should be as warmly clothed as circumstances will admit of; and the temperature of the room should be little if at all below 60°. The warmth is obviously favorable to the production of etherial vapor, and it is also favorable to the due effect on the recipient. In a room of low temperature, a cold shivering is apt to come on shortly after inhalation has been begun, disturbing and impeding the process. The patient should be spoken to kindly, and reassured, in the first instance; the mode of inhalation should be illustrated and made plain to him; and it may be well to make him breathe through the tube, experimentally, before the ether is poured into the apparatus. A position is arranged suitable to the operation, and also as suitable as possible to the inhalation. Recumbency, with the head slightly elevated, is usually to be preferred. All arrangements as to securing limbs, denuding the part to be operated on, sorting pillows, stationing attendants, &c., should be completed before inhalation is begun; for, quietude is very essential to success. The patient should not be spoken to, or touched, or in any way have his attention taken from his self-intoxicating occupation. A question, the fall of a jug or basin, a tap at the door, a sneeze or other accidental noise, may interrupt the process very seriously; rousing the patient from the advancing stupor, perhaps rendering him restless and unmanageable. The respiration should be steady, slow, and full; the patient filling his chest completely, and emptying it completely, at each inspiration and expiration. To prevent coughing, or other disagreeable consequences of the pungency of the vapor, a considerable dilution by atmospheric air is expedient at first; the amount of dilution being gradually diminished, as the patient is found to bear it. And to effect this very important part of the procedure, the tube is provided with a valve, which, when open, admits a full stream of atmospheric air, and which can be opened or shut—gradually or suddenly—at pleasure. The merit of inventing this important part of the apparatus is due, we believe, to Mr. Squire, chemist, London, who constructed the instruments first used successfully by Mr. Liston. The operator, or some duly qualified assistant, watches the pulse, breathing, countenance, and eye; careful to note the time when the operation may be begun, and equally careful to observe any untoward sign which might render temporary abstraction of the ether necessary.

In general, no unpleasant sign showing itself, the inhalation is carried to the point of complete stupefaction; and this, as already stated, is sought to be maintained by a continued, though minor use of the ether. An odd fact, however, comes now to be stated; namely, that stupefaction is by no means essential. Experience has fully shown that the brain may be acted on so as to annihilate for the time what may be termed the faculty of feeling pain: the organ of general sense may be lulled into profound sleep, while the organ of special sense, and the organ of intellectual function remain wide awake, active, and busily employed. The patient may feel no pain under very cruel cutting, and yet he may see, hear, taste, and smell, as well as ever, to all appearance; and he may also be perfectly conscious

of everything within reach of his observation—able to reason on such events most lucidly, and able to retain both the events and the reasoning in his memory afterwards. We have seen a patient following the operator with her eyes most intelligently and watchfully, as he shifted his place near her, lifted his knife, and proceeded to use it; wincing not at all during its use; answering questions by gesture, very readily and plainly; and after the operation was over, narrating every event as it occurred—declaring that she knew and saw all; stating that she knew and *felt* that she was being cut, and yet that she felt no pain whatever. Patients have said quietly, "you are sawing now," during the use of the saw in amputation; and afterwards they have declared most solemnly, that though quite conscious of that part of the operation, yet they felt no pain. We have seen a patient enduring amputation of a limb without any sign of suffering, opening her eyes during the performance, at its most painful part, desiring a country practitioner at some distance—under whose care she had formerly been, and whom she had not seen for some considerable time—addressing him by name, and requesting that he might not leave town without seeing her. And one of the first successful operations in the Royal Infirmary of Edinburgh well illustrates the same point;—the patient managing all the details of the inhalation himself, loudly insisting that the experiment was quite a failure, and would never do, that the matter must be deferred to another opportunity—and all the while the painful operation being busily proceeded with, preparing an agreeable surprise for the talkative sceptic. More examples to the same effect might be adduced, if necessary; the effect is undoubtedly. And physiologists, accordingly, are somewhat puzzled as to the exact statement of the effects produced by etherial inhalation on the nervous system. Of the brain proper, the spinal system and the ganglionic system—as the different parts of the nervous system are termed—which is the part affected? Strychnine is supposed to influence the spinal system mainly; digitalis, the ganglionic;—which does the ether affect? It is probable that the brain proper is the part mainly influenced; and sometimes only a portion of it; for, as has already been stated, the intellect may be active, and the special senses, too, may retain all their acuteness, while the patient is wholly unconscious of procedure which otherwise could not fail to be accompanied with the severest torture. General sense may be asleep, while intellectual and special sense may be wide awake.

The first effect of the inhalation would seem to be decidedly stimulant; afterwards it becomes powerfully sedative. Just as other things may be stimulant, in small doses, or lightly applied;—sedative in large doses, or long continued. Opium is a familiar example of this; causing excitement in small doses, and proving the most powerful of all narcotics when largely administered.

The effect of ether is usually very different when taken as a mere experiment, and as an amusement, from what is experienced in the business-use of it as a prelude and accompaniment to surgical operation. In the former case, excitement is very apt to ensue, with restlessness and talking; in the latter, the sedative effect is more speedily and smoothly attained. In fact, there is what is termed a *tolerance* of ether, when ether is really required; just as in particular diseases, whose cure demands certain remedies, there is engendered a tolerance of those remedies in the system. A grain of tartar emetic,

for example, in the healthy, produces great sickness and vomiting; and during inflammation of the lungs, the same dose, or one much larger, may be taken every second hour without producing either. In health, a few ounces, of blood taken from the arm may produce fainting; in serious inflammation, an approach to faintness will seldom be perceived until many ounces have been abstracted. Thirty drops of the tincture of Indian hemp produces, in health, a full narcotic effect, often very unpleasant; in tetanus, the same dose has been given every half-hour to a girl of eleven years of age. In health, a grain of opium will produce heavy sleep; in delirium-tremens, that dose may be repeated every hour, until ten times the amount is given, and still the patient may be wakeful as at first. A tolerance of bleeding is engendered by inflammation; of tartar emetic, by inflammation of a certain organ; of Indian hemp, by tetanus; of opium, by nervous excitement from drink. It would seem that a like tolerance of ether is engendered by the occurrence of surgical pain; or perhaps rather by the conviction of its certain approach, and the preparation of body and mind suitable for its advent.

It is the sedative effect we want in operating; and care should be taken to reach it as speedily and easily as possible. For there can be no doubt that the smaller the quantity of ether used, the better for the patient. And there can be as little doubt that the more fully and steadily the inspirations are made, and the quieter the patient is kept, the more speedily the anodyne effect is attained; or, in other words, the less ether is necessary. When the breathing is abrupt, irregular, and interrupted, and the patient restless and talkative, a great quantity of ether may be consumed, ere any sign of a favorable condition for operating appear; besides, unpleasant effects are apt to show themselves, and the after consequences are protracted and disagreeable. The same thing is observable in dealing with other remedial agents. In bleeding from the arm, for example, desiring to obtain a sedative result on the general circulation, we do not make a small opening in the vein, and slowly drain away the blood in a slender stream; a large number of ounces would always be required ere the desired result were obtained in this way. But a large orifice is made in the vein; the blood is taken *pleno rivo*; and the rapid abstraction, in this way, of a comparatively small amount of blood proves successful; the patient being soon brought to the verge of fainting. In like manner, it is by the rapid, full, and quiet consumption of ether, that the best effect is produced. We seek to purchase the desired result at as small a cost as possible; in the one case giving as little ether, in the other taking as little blood, as we can.

But it is now time that we speak somewhat more fully of the evil consequences which ether, taken by the lungs, may produce. 1. It may produce coughing, expectoration, or other sign of irritation of the air passages. And this irritation may sometimes prove so embarrassing, as to frustrate the attempt at letheonizing. 2. It may produce excitement; just as the nitrous oxide gas does; the patient becoming talkative and restless, or violent, and intolerant of restraint. 3. In females, or in males of highly nervous temperament, it may induce hysteria. 4. It may cause sickness and vomiting; and the younger the patient, the more liable is this to occur—more especially if the inhalation have been protracted and imperfect. More than once we have seen the tube untowardly saturated with the fluid contents of the stomach. 5. Convulsions may occur;

slight or violent; transient or protracted. Of course, the first appearance of them, is the signal for discontinuance of the ether—to be resumed, if the operation be not completed, so soon as the system has again become quiet. 6. Fainting may take place, the pulse becoming very rapid, and at last imperceptible; and the faint may prove of such intensity and duration as to cause serious alarm. But this is not likely to occur, except in the case of diseased heart. 7. Signs of congestion in the brain may manifest themselves; the patient threatening to pass into what is technically termed the condition of *coma*; as indicated by complete insensibility, dilated pupils, relaxed muscles, snoring and labored breathing. 8. Lastly, the experiment may fail; the patient becoming excited and confused but not dead to pain. This result, however, we feel convinced, will seldom if ever occur, when good ether is well administered by means of a suitable apparatus.

Such are the immediate results of an untoward kind; and the most of them, we believe, may be averted by a graduated, rapid, and quiet exhibition of good ether; should they threaten, inhalation is discontinued for a time, and warily resumed. Others may possibly show themselves at a more remote period. There may be a condition of system induced, resembling what is termed *irritative fever*; and by this recovery may be delayed. It is possible, also, that irritation of the air passages may leave some permanent traces behind; threatening to pass on into bronchitis or pneumonia.

A direct proof, however, of such casualties is, happily, still wanting. In one fatal case of amputation below the knee, in the Edinburgh Infirmary, in which ether had been successfully used, bronchitis and pneumonia were both discovered; but the woman died of inflammation of the veins, with acute abscess in the wrist and knee joints; and, besides, she had been for years in bad health, and at the time of the operation had a chronic affection of the lungs. In another patient, a boy, who had his thigh amputated, recovery was delayed by the occurrence of a slight attack of pneumonia; but then it did not show itself till a fortnight after the operation; and, at that period, the ether could certainly not be justly blamed.

Some seem to entertain a fear that a state of system untowardly favorable to inflammation of the veins, to erysipelas, and to tedious successive supurations in various parts of the body, may be engendered by the ether. And some cases in the Edinburgh Infirmary may have lent some coloring to the fancy, and, we honestly believe, nothing more than coloring—certainly no proof. It so happened that, in several cases of operation, in which ether had been used, these affections did occur, and proved both troublesome and dangerous. But it also happened that these same diseases, with similar dangerous and troublesome results, were occurring in other patients in the same wards, and at the same time, to whom no ether whatever had been in any way administered. In fact, the season, at that time, was very unhealthy; and these affections prevailed then in the hospital, in an epidemic form, attacking patients who had ether and who had not, indiscriminately. A "fatal case" has been reported in England; a coroner's inquest has sat on it, and the decision has been, "death by ether." But we will venture to say, that no unprejudiced surgeon, of experience in such matters, will think the verdict just or warranted. The woman had a large "osteosarcomatous, malignant" tumor extirpated by tedious dissection from the upper part of the thigh;

the operation lasting, according to one statement, 25 minutes, according to another, 55 minutes ; the etherization proving quite ineffectual, the patient wincing under each stroke of the knife, and saying afterwards that she felt it. After the operation, a state of great depression was observed ; and this continued. The operation was performed on a Tuesday forenoon, and the patient, sinking, died on the morning of Thursday following. Now, what is there in all this, but what has been observed again and again, in ordinary practice, before the days of ether ? Under the shock of less severe operations than this, susceptible frames have sunk in less time. And though it was very natural for the surgeon, in this case, to lay the blame on the ether—shifting it from himself and his knife—we suspect that he will find but few competent judges in the profession to agree with him. Obviously, had ether been even pushed in the case, the result could not have attached blame to its use ; for the result is none other than what has been often seen without ether. But there is another question. The ether here was ineffectual ; so far as the anodyne effect is concerned, the operation may be said to have been without etherization, and the patient sank by continuance of the shock. Had ether, by due administration, proved effectual as an anodyne, the painful and emotional part of the shock would have been averted ; and might not the patient, in consequence, have been still alive ? The " crowner's 'quest'" verdict is, in truth, imperfect. It was " death by ether." Ought it not rather to have been, " death by (want of) ether ?"

We are further told, " the patient who underwent the Cæsarean operation died." No wonder. How many have lived after such procedure ? " Another patient, on whom extirpation of the eyeball was performed, sank." Is that anything new ? " A clergyman, whose leg was amputated, never rallied after the operation." Have there not been thousands of such cases before the days of ether ?

It is worth while, in connection with this subject, to look to Travers on Constitutional Irritation—an old and valued authority. There we find many examples of sudden death after operations and injuries, some of them slight and trivial, which, had they occurred in these days, with the use of ether, would have placed in the hands of that agent's enemies, much more plausible arguments and facts for denouncing it as the cause of misadventure.

Two cases of lithotomy have been reported, in which the patients sank rapidly, and died. But that, too, is no new thing to the operating surgeon. The possibility of such an event has been long known and acknowledged. Most operators have accounted for such a calamity, very simply and naturally, by just supposing that the patient had never rallied from the shock of the operation ; a state from which, as just stated, we have hope of the ether effecting a relief, at least in part. Others, again, have puzzled themselves and others by ingeniously constructing theories more recondite in explanation. In one case of this kind, which occurred to an eminent surgeon, many years ago, we remember that the cause assigned for death, was the sudden and effectual relief afforded by removal of the stone ! It was supposed to have produced too abrupt a revulsion in the system ! But we do not deem it probable that in this way—by rendering the operation too easy—the ether runs any risk of being brought into disrepute ; although, by the bye, some surgeons are still to be found, who deem the

suffering of pain by the patient, during operation, essential to his well-doing ! \*

Let us not be mistaken. We do not say that fatal and formidable results may not happen, and have not happened, from ether's use in surgery. All we mean to assert is, that formidable and fatal results from ether's use in surgery have, in no one case as yet, been proven. And we go a step further. Ether, as an anodyne in surgery, is on its trial ; it has been openly accused of fatal and formidable results ; we seek for a thorough and impartial sifting of the evidence, *pro* and *con* ; and we confidently claim—so far as the present state of evidence goes—a verdict very different from that of the " crowner's 'quest'" not merely a " not proven," but " not guilty."

At one time, serious apprehensions were entertained, that during operations at night, great risk would be encountered, by reason of the inflammability of the admixture of etherial vapor with atmospheric air. And precautions such as the following were rife in the public prints :—

" It is useful to remind those who surrender themselves unreservedly to experiments of this nature, that the vapor of ether, when combining with the air, constitutes an explosive gaseous mixture of the most dangerous kind. Every phial of ether that is uncorked pours into its neighborhood torrents of vapor, which circulate unseen, around the sides of the vase, over the table, and down on the ground, and are in danger each moment of being inflamed, if a lamp or any lighted body be in the neighborhood of, or even some feet distant from, the recipient of the ether. Should, unfortunately, fire be communicated to this cloud of ether, an explosion within that compass is not the whole of the mischief. The heat is communicated to the flask itself, breaks it, scatters in all directions the combustible liquid, and produces calamities proportioned to the quantity of ether liberated. Now, if it be considered that the vapor-laden air inspired by a patient about to be operated on, is precisely this explosive mixture—that during the operation the surgeon is surrounded by lighted candles, and that the attendants pass backwards and forwards with lamps in their hands, an idea may be formed of the fate that awaits the patient if the fire should unhappily reach the air which he is inhaling. A sudden explosion will communicate itself to the interior of his chest, tear the bronchia throughout the entire ramifications, and literally reduce to atoms one of the most essential of the organs of life. There is nothing exaggerated in this statement. It is the strict expression of a well-known phenomenon transported to the interior of the *human machine*, and which will infallibly occur *if care be not taken*."

For some time, the profession stood abashed at this ; and instrument-makers were seized with a fit of contriving so as to avoid all such risk ; protecting every accessible point with wire gauze, such as is used in the safety-lamp of Davy, constructing new valves, &c. &c. A simple, though bold experiment, however, put all happily at rest. For it

\* This puts one in mind of a piscatorial illustration. Angling with worm, he is no true Waltonian who *likes to* see the victimized reptile writhing on the hook, struggling hard to be free, and showing very plain signs of intense suffering. The genuine Isaac strikes his worm, in the first instance, smartly between his palms, rendering it temporarily insensible by concussion ; the process of impalement is over soon, and without a struggle ; the senseless worm is found to have the better adjustment on the hook ; and the still bait proves the more tempting lure.

was found that after a large quantity of ether had been inhaled, up to the point of complete intoxication, a lighted paper might be placed in the mouth with all safety; the only effect being extinction of the flame by the outward current of air in expiration. By witnessing such an experiment, the most timid will at once be stripped of all fear of the "most essential of organs" being "reduced to atoms," either by night or by day.\*

From what has been stated, however, it is very plain that ether must at all times be administered with much care. And although experience cannot yet give forth any decided verdict on many points, yet, already, the following practical cautions may be safely enjoined. 1. When disease of the heart can be ascertained, ether should not be given; for, syncope, or fainting, is likely to take place, and such syncope may prove fatal. In all cases, so far as we are aware, in which fainting has occurred, and proved troublesome by long continuance, or by tendency to recur, disease of the heart has been detected. 2. When there is tendency to apoplexy, or to congestive affection of the brain, it should either be abstained from altogether, or administered most warily. 3. To those of highly nervous temperament, and more especially to females of this class, it is not suitable; for hysteria is very apt to be induced in a violent form. If given at all in such cases, it must be with extreme caution. 4. When there exists a chronic bronchitis; when there is any irritation in the air passages, indeed, whether recent or not; and when there is reason to suspect the existence of tubercles in the lungs—it is very questionable how far the use of ether is advisable; it being yet to be shown that its inhalation may not have the effect of causing over-action in those parts predisposed to disease, and so producing the most serious consequences. 5. Habitual and hard drinkers are obviously less amenable to the good effects of ether than others; they may be regarded as living ether-stills, constantly at work—every part of their frame ever saturated with the vapor; and, consequently, inhalation is not unlikely to prove of little or no power with them. In such patients, the use of ether may be altogether foregone; or, at least, if it be used, it must be begun with an expectation of delay ere the desired result occur; and, a large allowance of ether being inevitably essential thereto, a doubly careful outlook must be kept for untoward consequences that are not unlikely to arise. Will a knowledge of this fact lend any aid to the temperance movement, which is so much needed in our land? It ought. 6. In the case of the very young, the use of ether is hazardous; such patients being especially liable to nausea, prostration, and convulsions. When employed in them, it must be very cautiously, and never in a large dose. And yet it is surprising how the youngest bear it. The other day, a child of ten months had it administered successfully and safely. 7. In operations which are protracted, and which require nicety in the operator's movements of hand, as well as great steadiness on the part of the patient—dissection of a deep tumor from the neck, for example—perhaps the ether's use had better be dispensed with; for were the patient to waken up in the midst of this procedure, he would probably be with much difficulty calmed again; and, proving unsteady, he might induce both danger and delay.

\* The apparatus may explode, and hurt the bystanders by its fragments; but they are safe from being injured by fragments of lungs, the patient being fire-proof, and inexplosible.

Obviously, etherization ought never to be practised but by, or in presence of, the faculty; it being essential that a competent person should be at hand, to detect the signs of coming evil, and to apply those remedies which circumstances may demand. Like other powerful agents for weal or for woe, it will, no doubt, be found,

"*Sacra vitae anchora, circumspecti agentibus  
Cyma Charontis, in manu imperiti.*"

As obvious is it, how the ether's use may be turned to sinister purposes. Persons may be lulled into unconsciousness, for the purpose of nefarious acts being committed on their person or purse. Should itinerant tooth-drawers take to ether, and the public foolishly take to them, we advise the unhappy victims to look to their pockets, and leave all their personal movables, of any value, at home.

Is it necessary to recount the advantages which the use of ether affords in surgery? Not surely at great length. 1. The most obvious benefit is that which accrues directly to the patient by the annulling of pain. 2. And, from this, again, there results an important matter; namely, that patients, coming to have little or no dread and apprehension of operations, will readily submit to them, when assured by their medical advisers that their performance has become necessary, or even expedient; and they will not be tempted to conceal diseases, in the cure of which they imagine that operative measures may be required. In many operations, heretofore, it has been the experience of all operators that the patient has often been "more afraid than hurt." Now, we may almost say, in none will he be either hurt or frightened. 3. Heretofore, also, the *shock* of all serious operations has been formidable. The patient, however resigned and courageous, was deeply impressed in system; the pulse became feeble, the surface cold and pale, the eye dim, respiration troubled, and the whole powers of life were brought low. With ether we expect to see less of this; and much less we do see. Thighs may be amputated, stones extracted, and tumors removed, with little sign of shock imparted; the chief deviations from the normal characters of health being such as are known to be the effects of ether—and, accordingly, both manageable and transient. Of course, we do not expect all shock to be removed. Shock may be said to consist of three parts; mental or emotional; the effect of the suffering of pain; and an impression—*independent* of pain and emotion—made on the ganglionic and spinal systems of nerves. Removal of the two first is certainly within the power of etherization. But the last, often formidable, will still remain. 4. What is termed *reaction* from the shock used to be troublesome; of two kinds; strong and active, tending to inflammation; weak and tumultuous, tending towards irritable fever, and equally important—perhaps the less manageable of the two. Now, by the avoidance of shock, wholly or in great measure, it is not unreasonable to suppose that such untoward consequences of shock may be avoided—also wholly or in great measure. And experience, on this point, has already spoken favorably. 5. Some observers have thought that rather more blood flowed from operations conducted with ether, than from those without it. And some seem tolerably confident that there is a greater tendency to what is termed *secondary bleeding*; that is, bleeding taking place some hours after the operation, when the patient is warm in bed. As to the first objection, our own observa-

tion tends rather the other way; and we do not well understand how it should be otherwise. For, when the ether's charm works well, the placid condition of the part and patient is surely favorable to a gentle circulation, and to a moderate flow of blood from cut vessels. Should the patient and part become excited and unruly—as sometimes happens—then, no doubt, some trouble by many bleeding points may be expected. But such an event ought to be the exception to the general rule. As to the secondary bleeding; this may be explained in another way, without placing blame on the ether. In many operators, using ether without much experience of its effects, there is a natural desire to hurry over the work as rapidly as possible, lest the patient awake up and complain of pain; and, in consequence, there is a temptation to close the wound, and dress it finally, after having secured the main vessels only, without looking narrowly for minor points, or waiting to see if fresh bleeding orifices show themselves—as is ordinarily, and ought always to be done. And when this is not done, bleeding, by and by, can scarcely fail to occur, to a greater or less extent; obviously the fault, not of the ether, but of the ether's employer, the surgeon. With skilful etherization, and the ordinary precautions of deliberate operating, we are inclined to believe that a saving of blood will be the result. 6. Instead of hurry being imparted to the surgeon's hands, by the ether's use, they ought, on the contrary, to move with greater steadiness and deliberation. There is one operation in surgery which is always done slowly—because thus, and thus only, it can be done well—and that is trephining; there is, indeed, no excuse for haste; the sawing of the skull—the patient ordinarily insensible—being a painless operation. And, in like manner, during the painless operations of these days, the same deliberate movements should be practised; the more especially as we know that the manageability of the ether is such, as to enable us to maintain the desired state of unconsciousness almost for an indefinite period. It is very plain, however, that such increased steadiness, deliberation, and consequent perfection of operating, is not to be expected until the surgeon has become familiar with the ether's use, and confident of the power with which he can thereby command the sensibilities of his patient. In fact, so manageable is the agency, that we have often been forced mentally to liken it to the power of steam, which may be turned off or turned on as we list. Working a vessel up a difficult channel, how often is the power of progression increased, slackened, turned off, or reversed! In ether, we have no reverse in the power itself; but, during an operation, it would be no great misapplication of terms to find the superintending surgeon regulating his anodyne powers by "Set on!"—or, as it is an American discovery, "Go-a-head!"—"Ease her!" "Stop her!" Unfortunately, there is no "Back her!" or "A stern!" But, if a bright look-out is kept, and no rash way made upon the vessel, the necessity for such a cry, we fondly think, will not often arise. How many operations with ether must now have taken place—many, too, it is no want of charity to suppose, with bad ether, bad apparatus, and want of caution; and yet, so far as we know, there is not one instance of fatal casualty which can be ascribed directly to the ether's use.

One decided inconvenience certainly attends on etherization. More time is altogether occupied in the surgeon's labor. Dentists are already grumbling,

doubtless, at the time now consumed in tooth extraction; and may be thinking, not unreasonably, of doubling the fee, when ether is used; just as a book with plates is higher in value than the ordinary unillustrated copy; or as a dinner with wine and fruit is more expensive than the plain joint, a glass, of water and a tooth-pick.\* A greater demand is made on the surgeon's time, no doubt; and sometimes, too, his patience is tasked. But if, by yielding time and patience, he contribute so powerfully to his patients' comfort and wellbeing, as he has good reason to expect, surely he will not grudge the sacrifice, on his part, even were it double what it is.

But it is not in *cutting* only that ether is of use. As an opponent of muscular resistance, it promises to be of great service in surgery. In dislocations of old standing, more especially of the larger joints, as the hip and shoulder, it is well known that great difficulty is experienced in effecting reduction; and this mainly on account of the resistance which is afforded by the muscles, whose spasmodic action is partly involuntary and partly in obedience to the will. However resolute and calm the patient may be, and anxious to assist the surgeon in every way, yet, so soon as violent extending force is applied to the limb, he cannot help straining himself greatly, fixing his chest during deep inspirations, and rendering the muscles connected with the displaced joint as rigid as if they were of wood or plaster. Now, all this straining, the effect of the will, ethereal inhalation is calculated to avert entirely; and we have seen it so averted. Consequently, one great obstacle to reduction may, by the ether, be overcome. We are not so sanguine of its proving a successful opponent of involuntary spasm; having repeatedly witnessed much and violent spasmodic movement during amputations, of the pain of which the patient felt nothing. In hernia, too, the remedy promises well, in preventing the straining of the patient, which every experienced surgeon knows is so greatly obstructive of reduction. In a recent case of rupture operated on, the bowels were constantly protruding from the wound, and could not be replaced, on account of the great and incontrollable action of the abdominal muscles; ether was administered, the patient became unconscious, the abdomen lay quiet, and the protruded parts were then, without the slightest difficulty, replaced and retained. Even supposing, therefore, that etherial inhalation be found ineffectual in allaying involuntary spasm, it promises much aid, by the averting of voluntary muscular action, in the reduction of dislocated joints, and in hernia—which may not inaptly be regarded as a dislocation of bowel.

But, further, the ether's use is not to be limited to the province of surgery alone. It is applicable to every department of the healing art. In the practice of medicine, and in midwifery, we may expect its cautious employment to be followed by signal benefits, in certain circumstances. In the latter department, Professor Simpson has already reaped no slight success. His first application of ether was to a difficult case of turning, in a deformed mother. A painful operation had to be performed within the womb; and then the child had to be pulled forcibly away. Much force was necessary; in ordinary circumstances, much pain must have been endured, and the after recovery would in all

\* We think it not at all unlikely that etherization will be abandoned in tooth-drawing, and other minor operations, and that its use will be in a great measure limited to the more serious matters of surgery.

probability have proved tedious. As it was, no pain whatever was felt; there was no shock, or lowering of the system; and "on the fourth day she had walked out of her room to visit her mother." In several cases of extraction by forceps, the results of etherization have been equally satisfactory. In every case, "the uterine contractions continued as regular in their recurrence and duration after the state of etherization had been induced, as before the inhalation was begun. \* \* \* \*

Indeed, in some cases, the pains have appeared to me to have become increased as the consciousness of the patient became diminished. This has more particularly occurred with one or two patients, who breathed ether combined with tincture of ergot, or containing a solution of its oil."\* And thus, though in some cases of surgery, ether may seem to labor under a disadvantage in not proving a successful opponent of involuntary muscular action, here, in the obstetric art, the greatest possible advantage is derived from that circumstance. Parturition is shorn of pain, and yet not retarded.

The effects of ether, Professor Simpson has found very various in his patients.

"In some, a state of total apathy and insensibility seems to be produced; others move about and complain more or less loudly during the uterine contractions, though afterwards, when restored to their state of common consciousness, they have no recollection of any suffering whatever, or, indeed, of anything that had occurred during the inhalation and action of the ether; others, again, remain quite aware and conscious of what is going on around them, and watch the recurrence of the uterine contractions, but feel indifferent to their effects, and not in any degree distressed by their presence; and in another class, again, the attendant suffering is merely more or less diminished and obtunded, without being perfectly cancelled and annulled."

"A careful collection," continues the professor, "of cautious and accurate observations will no doubt be required, before the inhalation of sulphuric ether is adopted to any great extent in the practice of midwifery. It will be necessary to ascertain its precise effects, both upon the action of the uterus, and of the assistant abdominal muscles; its influence, if any, upon the child; whether it gives a tendency to hemorrhage or other complications; the contra-indications peculiar to its use; the most certain modes of exhibiting it; the length of time it may be employed, &c. In no case have I observed any harm whatever, to either mother or infant, follow upon its employment. And, on the other hand, I have the strongest assurance and conviction, that I have already seen no small amount of maternal suffering and agony saved by its application."

As to the question of whether or not etherization is to be extended to cases of *natural* parturition, with the object of simply assuaging pain, Professor Simpson thus ably expresses himself:—

"Custom and prejudice, and, perhaps, the idea of its inevitable necessity, make both the profession and our patients look upon the amount and intensity of pain encountered in common cases of natural labor, as far less worthy of consideration than in reality it is. Viewed apart, and in an isolated light, the degree of actual pain usually endured during common labor is as great, if not greater, than that attendant upon most surgical operations. I allude particularly to the excessive pain and anguish, which, in nine out of ten cases, accompany the pas-

sage of the child's head through the outlet of the pelvis and external parts. Speaking of common or natural labor in its last stages, Dr. Merriman observes, the pulse gradually increases in quickness and force; the skin grows hot; the face becomes intensely red; drops of sweat stand upon the forehead; and a perspiration, sometimes profuse, breaks out all over the body; frequent violent tremblings accompany the last pain, and at the moment that the head passes into the world, *the extremity of suffering seems to be beyond endurance.*" Or, take the picture of the sufferings of the mother in the last stage of natural labor, as portrayed by the most faithful of living observers—Professor Naegele of Heidelberg—"The pains (he observes) of this stage are still more severe, painful, and enduring; return after a short interval, and take a far greater effect upon the patient than those of the previous stage. Their severity increases so much the more from the additional suffering arising from the continually increasing distension of the external parts. They convulse the whole frame, and have hence been called the *doles conquassantes*. The bearing down becomes more continued, and there is not unfrequently vomiting. The patient quivers and trembles all over. Her face is flushed, and with the rest of the body, is bathed in perspiration. Her looks are staring and wild; the features alter so much that they can scarcely be recognized. Her impatience rises to its maximum with loud crying and wailing, and frequently expressions which, even with sensible, high-principled women, border close upon insanity. Everything denotes the violent manner in which both body and mind are affected."

"I have stated that the question which I have been repeatedly asked is this—will we ever be 'justified' in using the vapor of ether to assuage the pains of natural labor? Now, if experience betimes goes fully to prove the safety with which ether may, under proper precautions and management, be employed in the course of parturition, then, looking to the facts of the case, and considering the actual amount of pain usually endured, (as shown in the above descriptions of Merriman, Naegele, and others,) I believe that the question will require to be changed in its character. For, instead of determining in relation to it whether we shall be 'justified' in using this agent under the circumstances named, it will become, on the other hand, necessary to determine whether, on any grounds, moral or medical, a professional man could deem himself 'justified' in withholding, and *not* using any such safe means, (as we at present pre-suppose this to be,) provided he had the power by it of assuaging the agonies of the last stage of natural labor, and thus counteracting what Velpeau describes as 'those piercing cries, that agitation so lively, those excessive efforts, those inexpressible agonies, and those pains apparently intolerable,' which accompany the termination of natural parturition in the human mother."

On the 23d of February, Baron Paul Dubois, clinical professor of midwifery at the Faculty of Paris, read a paper to the Academy of Medicine in that city, detailing his experience of etherization in the practice of midwifery. His conclusions are the following:—1. It has the power of preventing pain during obstetric operations; such as turning, application of forceps, &c. 2. It may momentarily suspend the pains of natural labor. 3. It does not suspend uterine contraction, nor impede the synergic action of the abdominal muscles. 4. It ap-

\* *Monthly Journal*, March, 1847, p. 724.

pears to lessen the natural resistance which the perineal muscles oppose to the expulsion of the head. 5. It has not appeared to exert any bad influence over the life or health of the child. Notwithstanding, he is not sanguine of its general applicability to obstetrics; and concludes with an opinion that its use should be "restrained to a very limited number of cases, the nature of which ultimate experience will better allow us to determine." In regard to this, however, and in connexion with the third general statement, it is to be remembered, that the baron does not seem to have maintained the ether's influence in his experiments; finally withdrawing the tube after the full effect had been once produced.\* One important matter he well insists on; namely, the tendency to convulsions which exists in puerperal women, the risk there is of convulsions being produced by ether in any patient, and, consequently, the great necessity for caution in ether's obstetric use.

Our own impression is, that etherization will ultimately be found more available in the obstetric, than in any other department of the healing art.

In medicine, the inhalation of ether has been applied with success to relieve the painful paroxysms of asthma, and to assuage the intense suffering attendant on neuralgia. And to other diseases, attended with much pain, we have no doubt that in due time the application will be extended. "Pneumatic medicine" is revived.

In tetanus, we do not look sanguinely for success; for, as already stated, etherization is not likely to control involuntary spasm, and it acts but slightly, if at all, on the true spinal system—unless pushed very far. When, however, in tetanus, amputation is deemed expedient, etherization will then prove unspeakably valuable in averting an aggravation of suffering, during the operation, which might otherwise prove almost beyond the limit of human endurance.

In public practice, etherization has been found very useful in detecting feigned diseases. The patient having been, *nolens volens*, thrown into helpless unconsciousness, stiff joints have become supple, crooked backs have grown straight, and various other decrepitudes have thawed into normal shape and form—unmasking the impostor.

One field of inquiry, vast and important, seems just opening up to the profession; namely, the inhalation of other remedial agents, in the form of vapor, with or without ether—as practised by Dr. Pearson and others, in the end of last century. And who knows, but, by the resuscitation of "pneumatic medicine," many diseases may be brought more thoroughly under control; the remedies, in small quantity, being directly mixed with the circulating blood—borne along thereby, rapidly pervading the whole system, and both speedily and effectually exercising their remedial agency.† Professor

\* To show that during parturition etherization may be maintained for a prolonged period, it may be mentioned that in one case, under the charge of Professor Simpson, the patient was kept, by the ether's use, in a complete state of unconsciousness as to pain, for four consecutive hours; delivery being at length accomplished painlessly, without her knowledge, and with perfect safety to both mother and child. And it is further worthy of note, that the former was a person of very delicate frame. In a more recent case, the patient was kept etherized for six consecutive hours, was delivered unconsciously by use of forceps, felt no pain, and did well.

† According to Wagner, vaporizable substances thus applied to the bronchial cells "seem to make their way into the blood through the unbroken vascular membrane, with the same certainty and ease as when they are injected directly into the veins."

Simpson has already used the ergot in this way, as formerly stated; and we doubt not this is but the commencement, by him and others, of further investigation in this important, interesting, and hopeful direction.

And not merely to the human being is the ether's use to be limited. The lower animals partake also of its benefits. Already, horses and dogs have been relieved from troublesome and dangerous affections, by operations rendered painless.\* Vicious horses have been shod, too, with safety and comfort to themselves and others. In the department of Van Amburgh, there is no saying what may be achieved.

And as if medicine did not afford a wide enough field for ether, that of law has been slightly broached upon. A proposal has been made to extend etherization to the judiciary courts; and a convict, lately, we see, has begged to be executed while under the Letheon's influence. Hanging-made-easy, however, is scarcely to be expected. The innovation would hardly be consistent with justice, however it might be regarded in law.

But we must hasten to apologize for indulgence in aught jocular, in a matter so grave and important as etherization; which in this and other countries has already removed all pain, and no little danger, from thousands of operations of every grade and kind in surgery; which has already made some progress in the successful treatment of disease; and which has already brought no slight help to the most interesting portion of mankind, in those hours of heavy trial which they have hitherto borne, with the greatest fortitude, indeed, but also with the intensest agony of pain; from which, in short, within a few brief months, a vast amount of good has already come, and from which we still, not unreasonably, hope for good, to an extent that is almost incalculable.

Do not let us be carried away, however, by enthusiasm, natural in the circumstances. All new discoveries run as much risk of damage from the unwise zeal of their partizans, as from the hostility of their opponents. Let our advance in this hopeful path be cautious and sure. Let wisdom, honesty, and candor attend on every observation. And let every man, old and young, casting aside all prejudice, and anxious only to know the truth, do what in him lies to ascertain how much of actual good there is, or may be, in the ether's use; how much of possible evil may attend on it; how the latter is to be averted or subdued, and how the former may be best secured and still further extended.

Will it be seriously urged, in depreciation of ether's anodyne use, that it is a "flying in the face of Providence;" that it cannot be the will of Heaven that such immunity from suffering should be, else so great a gift had long since been conferred upon mankind? If cavillers there be, who would thus obstruct the path of inquiry, they must be blind to the ordinary doings of Providence, and sad dullards in the reading of His will and way. Take but one illustration; itself amply sufficient to silence

\* We observe that a recent experimenter on horse-flesh has been making an ingenuous exposé of his adventures with ether. His first trials, instituted apparently for no earthly purpose, except just to see what would happen, did not satisfy him; and the want of success he attributed to "the too free entrance of atmospheric air" in inhalation. Accordingly, in his next experiment, he determined to prevent, if possible, the ingress of one particle of that fluid, so dangerous and unsuitable for lungs; and he succeeded marvellously; choking his victim as thoroughly as if he had hanged him by a halter. Perhaps he thinks that the ether had something to do with the casualty!

all such opponents. How came it that vaccination was withheld till the time of Jenner? Why were so many thousands of human beings permitted to perish under the devastating scourge of small-pox, until, in the eighteenth century, He was pleased at length to say, "Hitherto shalt thou come, and no further!" Simply because such was His will—"to mortal eye inscrutable."

And in conclusion—should our fond hopes be realized, and etherization perform all that it offers—let us not forget from whom the favor has really come, and to whom our thanksgiving is really due. What lay hid for ages, eluding the anxious search of the wisest, has been unexpectedly revealed, under humble and unlooked-for agency. And in such an event there is surely a manifest declaration of the sovereign power of Him who doeth all things wisely and well—"The author of every good and of every perfect gift." Let us humble ourselves at the thought of man's weakness, and shortness of sight; powerless even when strengthened by experience, or when enlightened by philosophy. Let us cease not to extol Him who is all bountiful, as he is omniscient and almighty, who has been graciously pleased, in these latter days, to mitigate in part the temporal punishment which sin had brought into the world; who, while He hateth sin, yet loveth the sinner; who is "of great kindness, and repenteth Him of the evil;" who "retaineth not his anger forever, because he delighteth in mercy."\*

#### MR. BUNN AND JENNY LIND.

MR. BUNN continues to grieve for Jenny Lind, and will not be comforted. Mr. Bunn complains that he has been cruelly jilted; Jenny has broken her plighted faith to Drury Lane, and Mr. Bunn bewails the loss of what he has not gained, groans over unrefuted misrepresentations, and touchingly advertises to a long and expensive journey to Berlin.

It is true, he says, that he has accepted 2,000*l.* to soothe his griefs, but that is not enough, for it is of mighty concern to Mr. Bunn that the cause of Jenny's repudiation of her engagement with him should not be mistaken, and only to clear up that point he challenged her to sing three times at Drury Lane. No usage can deter the manager from his pursuit. It is said of the nightingale, that while it sings, it presses its breast to the thorn; and so Mr. Bunn, while he pours forth his touching plaints, leans to the object that has pierced him in the tenderest place, the pocket. Never was there a more piteous case of a star-crossed manager. And truth to say, Mr. Bunn has not unresistingly succumbed to the disappointment, but has sought his distractions, however vainly. He first endeavored to solace himself with Mrs. Butler, and, thwarted in that quarter, he had next recourse to the beasts, the camels and elephants, but they have failed to restore peace to the breast of a disappointed manager; and, after all, he returns with fresh overtures to the obdurate Jenny.

The proposals and their treatment appear to be as follows:—You have paid 2,000*l.* in settlement of the pecuniary question between us, but sing three nights at Drury Lane, just by way of showing that we are friends; no answer being vouchsafed to this modest request, Mr. Bunn says, as you will not sing

\* Since writing the preceding pages we have seen the new number of the *British and Foreign Medical Review*; and are delighted to find the accomplished editor of that influential journal upholding the same general views in regard to etherization, as we, more feebly, have ventured to advocate.

three times to please me, to prove that I was not interested in asking it, write me an assurance that you have no other motive for breaking your engagement than the one already assigned in your letter. If this request should also remain unanswered, what will Mr. Bunn ask next to comfort him? Will he tempt Jenny Lind with the offer of a seat on one of his elephants, and a grand scene in the *Imam's Daughter*, or will he implore her for one night only to personate an Ethiopian serenader? Mr. Bunn's fame as a lyric writer is established, and he bids fair to amaze and amuse the public no less in the epistolatory style. *Punch* has often presented him to us striking the lyre, and now we see Mr. Bunn's own representations of himself in the touching plight of wearing the willow. It may perhaps hardly be believed that the following woe-begone letter is genuine, but it appears in the *Times* at special request:

"Theatre Royal, Drury Lane, April 19.

"Mademoiselle,—Up to the present moment of your arrival in England, the losses occasioned me by your violation of the contract you entered into with me are unrepaired, and the misrepresentations under which I have suffered remain unrefuted; the result of my long and expensive journey to Berlin to effect the engagement you there signed, ending thus far in your being the gainer of a princely income from another theatre, and I the complete victim.

"Without any motive but the proper vindication of my rights, without doing any injury, or committing any offence to others, I have been mercilessly assailed week after week by the adherents of that theatre, and the common privilege of self-defence altogether denied me.

"It is true that towards the reparation of these losses you have offered me 2,000*l.*, and that, as respects the pecuniary question between us, I have accepted that offer; but as it was, and is of moment to me that the cause of your repudiation of your engagement with me should no longer be misrepresented, I required you, in my letter of the 16th of last month, to sing three times at this theatre. You have not answered this letter, and I beg, therefore, to say that, in order to prove to you this proposal was not a merely interested one, I will be satisfied, instead of those three representations, with your written assurance that you were not deterred from appearing on the Drury Lane stage by any other motive than the one assigned in your letter of October, 17, 1845, wherein, on asking me to cancel our agreement, you offered me ample indemnification should you ever appear at her majesty's theatre.

"I make this final proposal to restore our former good understanding, to avoid further litigation, and to dispense with any more public discussion—of course without prejudice.

"I have the honor to be, Mademoiselle,

"Your obedient, humble servant,

"Mademoiselle Jenny Lind. A. BUNN."

As there seems never to have been a good understanding between the parties, it is hard to see how what has never existed can be restored by the requested note of assurance; and Miss Jenny Lind may probably smile at the implied threat of further litigation, for which, according to Mr. Bunn's own statement, there can now be no ground, or pretence of ground, the 2,000*l.* having been confessedly accepted in settlement of the pecuniary question. And never, surely, was 2,000*l.* so cheaply got. No engagement that ever was kept with Mr. Bunn has paid him so well as the broken one of which he so unreasonably and ungratefully complains.—*Examiner*.

From the *Spectator*.

MADAME SCHOPENHAUER'S YOUTHFUL LIFE  
AND PICTURES OF TRAVEL.

MADAME SCHOPENHAUER was a friend of Goethe, and an authoress of some popularity in Germany; who after publishing four-and-twenty volumes of biography, travels, fiction, and criticism on the fine arts, determined to write her own life, partly as an amusement in her declining years, partly to save herself from the hands of biographers. This plan, however, was intercepted by her sudden death, in 1838, when she had only recorded one third of her career.

It has been said by the *Edinburgh Review*, "that it was her lot to live through and partly to witness some of the greatest events of modern times." The statement is undoubtedly true, but not the implied conclusion; for Madame Schopenhauer lived through no more than the many million persons on the continent who existed between 1766 and the close of the great contest which ended at Waterloo. Madame Schopenhauer was born at Danzig, in 1766, of respectable parents in good circumstances. This old member of the Hanseatic League was then a free city; and little Miss Trosiener, at six years old, was startled by the appearance of commotion and sadness which the Danzigers displayed when the first dismemberment of Poland was declared; for though the imperial free city was directly unaffected, yet a line of circumvallation was drawn about her by Prussian customhouses, and the citizens felt instinctively that the prosperity and glory of Danzig was stricken. Johanna Henrietta Trosiener appears to have possessed a vivacious and precocious mind; and the independence of the "free city," with a smattering of Greek and Roman history, made her a partisan of republics. On the breaking out of the American war, in her tenth year, she became an active advocate of that "great event of modern times," and rejoiced whenever she heard of any success on the part of the insurgents. At eighteen, she married a partner in one of the first mercantile houses of Danzig; and in 1787, set out with her husband on a tour to England by way of Germany and France. In Paris she saw a royal and courtly procession in all its splendor, while the people and the public were muttering discontent, and signs of gloom and change were abroad, which Madame Schopenhauer did not then understand. In 1790 her autobiography breaks off; describing no further events than the troubles of travelling in Germany at the end of the last century, and the change in the fashion of the ladies' dresses at Danzig, caused by Madame Schopenhauer's costume on her return from her European tour. With one remarkable event of modern times she was closely, and very much against her will, connected. She was at Weimar during the battle of Jena, listening anxiously to the roar of artillery throughout the contest, as she could not get away for want of horses; and she was a witness to the subsequent riot, pillage, and lawlessness of the French infantry—for the cavalry conducted themselves like gentlemen. An interesting account of her feelings and observations during this period is given in a letter she wrote at the time. With some extracts from her travels in 1803, selected by her daughter, it forms a fragmentary continuation of Madame Schopenhauer's autobiography, as far down as 1806.

As a life, there is not very much to be said of these volumes, owing to the deficiency of events in the heroine's career: nor was she a person of suf-

ficient eminence to interest the reader in the picture of her youthful studies and opinions, or of certain household and Danzig "characters" whom she describes at large. The value of the book consists in its sketches of manners, opinions, and domestic life, such as they existed in the burgher aristocracy of the free cities towards the end of the last century; for we suspect there was less of education, society, and independent thought, in the towns that were under the more direct rule of the German sovereigns. In this point of view, the book has a curious kind of value. The matter is slight, the persons and incidents are of small account, or altogether trivial; but they are real, and well though rather diffusely and affectedly described. Without being at all like Washington Irving in style, Madame Schopenhauer resembles him essentially in having a fondness for old fashions and quaint characters, and bringing them out with picturesque effect by a singular combination of lucky touches and laborious minuteness. In one particular Madame Schopenhauer has the advantage. There is more reality—less of artificial composition, while her portraiture is nearly as like life. Her father, mother, nurse, the chief clerk, and the English chaplain, (Scotch Presbyterian, we suppose,) with the tutor, who proposed for her at thirteen, all her acquaintances either known familiarly or by sight, and the appearance of the city, citizens, and frequenters of Danzig, come before us like creatures preserved in amber. The things may be "neither rich nor rare," but they have lived, and there they are. The book, however, is not one for all times or moods of mind: we must be at leisure as regards externals, and patiently disposed or listless in ourselves, before we can advantageously study Madame Schopenhauer's pictures of the old times and the manners prevailing during her *Youthful Life*. There are a few passing notices of whilom celebrities, among whom Zimmerman and the Abbé Vogler are the best remembered; but they are not full or numerous enough to form a feature.

Not the least interesting part of the volumes are the "Pictures of Travel," not for the incidents or observations, but for the description of the difficulties encountered in travelling through Germany, and the sketches of manners both there and elsewhere. The following is a good indication of the artificial taste of the old régime, which delighted in the unnatural, forced, and surprising, but carried it to a high degree of excellence. The description is from the writer's visit to Paris in 1787-88.

"In the evening I rested myself at the theatre. Of these there are a great many in Paris, open every day to playgoers; and I generally returned home very well pleased with my entertainment. I shall only speak of one of the smaller ones here—Les Petits Comédiens du Roi. The performers were children of from fourteen to sixteen years of age, who acted in an elegant little house that stood within the Palais Royal. Their performances, which gave general satisfaction to a public by no means hard to please, were confined to operetti, farces, vaudevilles, and other similar trifles, in which the French so far surpass all other nations.

"Some one whispered to us, 'The only thing that is remarkable here is, that one of the little actors does not utter a word; he plays, whilst another behind the curtain declaims his piece: could you discover which he was?' I paid the closest attention, and fancied I had detected the voice; when, to my great surprise, I was told, that the boy I had singled out was a rather awkward beginner; and

that, in fact, not a boy or girl on the stage had uttered a word; that the whole piece had been recited from beginning to end behind the curtain, and that the entire performance of the actors was pantomime.

"The deception was perfect: when I was informed of it, I had the greatest difficulty in believing what I had been told; not a look, not a glance or a movement, too soon or too late: not even in the singing, when one could plainly see the tremulous motion of the throat, when some rather difficult collerature were poured forth by the singer.

"I could never make out the utility or purpose for which these poor children had been subjected to a training so laborious, as it must have been to themselves and to their instructors; and I could obtain no satisfactory explanation from any one that I asked about it. The whole mummery was dispersed in the storms of the revolution, and it was too counter to the taste of the present age to be revived."

Passing over Madame's own account of her being squeezed in the crowd nigh unto death, and her rescue by the laconic appeal of a French friend to the Swiss guards, we will take her description of a procession she saw at Versailles, in which all the royal family appeared, and for about the last time in that kind of thing.

"The procession now drew nigh, and I forgot the danger to which I had been exposed but a few minutes before. The sweet breath of Eastern scents bespoke their approach; the dazzling glitter of jewels and the richness of the embroidery blinded my eyes: I saw, but I could hardly say what. I have no distinct impression of the whole after the lapse of so many years; some single figures alone stand prominently out in my recollection.

"And first, the king, surrounded by the grandes of his kingdom: his cumbrous form and rolling gait did not set him off to advantage. The expression of his by no means unpleasing features, and his whole appearance, conveyed the idea of an irresoluteness of character, such as one would not have expected in a king. The noble soul which animated this ungainly form lay concealed, and scarcely showed its powers till on the scaffold it took its flight from the clay in which it had dwelt.

"The king's two brothers, the Count of Provence and the Count d'Artois, afterwards Louis XVIII. and Charles X., in external appearance were far before him: they were handsome, well-proportioned men, who knew how to display to advantage every favor nature had bestowed on them. But their cousin, the Duke of Orléans, was a finer man than either of them: his figure was really kingly, and his features handsome and regular. Who could at that time have supposed that he would become the execration of the world, the murderer of his royal kinsman, the horrid *Égalité*, in whose bosom hell itself was even then raging; the monster who degraded himself so that the lowest scum of the populace with whom he associated hurried him with scorn from prison to prison, till they brought him to the guillotine in order to be rid of him?

"And now the queen, the most dazzling object of her day: she was then in her thirty-second year; her beauty was fully developed, and as yet she had not lost the charms of youth. She was tall and slightly made, but her limbs were beautifully proportioned; and in her gait and look there was that indescribable charm, combined with a dignity of character, that made her seem as if she, the daughter of an emperor, had been born on purpose to rule and enchant a world that was doing her homage.

"She was fair, her complexion exquisitely transparent; her features regular, her countenance of a fine oval; her bright blue eyes, and delicately curved Roman nose, all, in short, combined to render her one of the most exquisitely beautiful creatures that had ever been seen. She did not dress in the extreme of the tasteless fashions which then prevailed. The Parisians, who were determined to find a flaw in her, have positively asserted that she had red hair: this question, if of importance, it would be hard to decide, as the queen wore the brownish à la machealle powder then in general use, which gave a reddish tinge to all hair. \* \* \* \* \*

"A smiling little boy was sitting in a child's carriage on the great terrace close to the palace; and a slim, pale, little girl, of about eight years of age, walked by his side, holding his hand, and looking with merry eyes on the gay world around her. That boy was the most innocent sacrifice of the time—it was the dauphin; the delicate little nymph was his sister, afterwards Duchess of Angoulême, one of the most unfortunate of her family.

"The haughty but beautiful Diana de Polignac accompanied the royal children: perhaps it was the sight of her, so hateful to the people, who suspected her of being the dangerous adviser of the queen, that kept the many promenaders in the garden from saluting the little dauphin in their usual hearty style."

The account of the state of Weimar after the battle, the fears of the inhabitants, or at least of such as the writer came in contact with, and the mixture of recklessness, vivacity, savagery, and good-nature of the French troops, retrieved by some honorable feeling in individuals, is a strange picture, but depending for its effect upon its minuteness and reiteration: traits which, indeed, distinguish the volumes throughout, and do not well adapt them for quotation in our brief space.

#### DEATH OF SIR WALTER SCOTT.

ADVICES from the Cape of Good Hope bring intelligence of the death of Lieut.-Col. Sir Walter Scott, Bart., of Abbotsford, the eldest son and last surviving child of the author of "Waverley." He was on his way home from Madras, and was extremely weak when he stopped at the Cape, where he died of dysentery. The baronetey becomes extinct, but the Abbotsford property passes, it is said, to Walter Scott Lockhart, a cornet in the 16th lancers, the only son of the editor of "The Quarterly Review," and the only grandson of the great author.

The fate of the Scott family has been singularly melancholy. The first Sir Walter was married in 1798, and had issue two sons and two daughters; they all lived to attain maturity, and their father had the delight of seeing them, by their dutiful attention, repay the anxious care with which he had watched over their childhood and youth. We have collected a few notices illustrative of the early life of his heir, as his decease concludes the history of this once flourishing and happy family, which has been as unfortunate in its close as it was honored and prosperous at its commencement.

Young Walter was bold and high-spirited as a boy, and very early gave indications of his spirit. From his childish admiration of Johnnie Armstrong, whose ruined tower still exists at Gilnockie, near Netherby, he was commonly called by his family, Gilnockie, the Laird of Gilnockie, or more simply, the laird. In Lockhart's life of Sir Walter it is mentioned, as illustrative of the modest and unobtrusive character of Scott, that he did not care to

have his works mentioned in presence of his family. One day, Walter came home from the high school with tears and blood hardened together upon his cheeks. "Well, Wat," said his father, "what have you been fighting about to-day?" The boy blushed and hung his head, and at last stammered out that "he had been called a lassie." "Indeed!" said Mrs. Scott, "this was a terrible mischief, to be sure." "You may say what you please, mamma," Wat answered roughly, "but I dinna think there's a *waufer* (shabbier) thing in the world than to be a lassie to sit boring at a clout." Upon further inquiry it turned out that his companions had dubbed him "the Lady of the Lake," and the phrase was to him incomprehensible, save as conveying some imputation on his prowess, which he accordingly vindicated in the usual style of the yards. Of the poem he had never before heard. Shortly after this story having got wind, one of Scott's colleagues of the clerk-table said to the boy, "Gilnockie, my man, you cannot surely help seeing that great people make more work about your papa than they do about me or any other of your uncles; what is it, do you suppose, that occasions this?" The little fellow pondered for a minute or two, and then answered very gravely, "It's comonly him that sees the hare sitting."

Scott was too indulgent, and at the same time, too wise a father to attempt to coerce his son's inclinations, and he, therefore, allowed him to contemplate a career in which his natural desires would have full scope, and give fair promise of carrying him to distinction. In 1818 he was made a cornet in the corps of the Selkirkshire Yeomanry Cavalry, and all his studies took the direction of a military life. His father, writing of him in 1818, says, in speaking of a flying visit to his home, "that though passionately fond of shooting, he only staid with us three days, his mind running entirely on mathematics and fortifications." Shortly afterwards, that is in 1819, he obtained a commission as cornet in the 18th Hussars; and Scott, then speaking of his vigorous and handsome form, which gave hope of strong health and long life, described him as "the shoot of an aik," (oak,) and said of his disposition, "He is certainly one of the best conditioned lads I ever saw in point of temper." He was present at the marriage of his sister Sophia with Lockhart, in April, 1820, and Scott, then writing to a friend, says that "when he attended the ceremony in full regiments you have scarce a handsomer young man. He is about six feet and one inch, and perfectly well made." At another time, alluding to his robust form, Scott notices him as "a new edition of the Irish giant."

In 1821 he quitted England for Berlin, to complete his military education there; and the letters written to him by his father show the care paid by Scott to his improvement, the attention he paid to the formation of his moral and intellectual character, and the pride he felt in his progress. When he returned, in July, 1823, Scott wrote:—"Walter, has returned a fine, bold, steady, soldier-like young man, from his abode on the continent." His marriage with Miss Jobson, heiress of Lochore, took place about eighteen months later. Captain Basil Hall, who was a visitor at Abbotsford in the winter of 1824-25, writes in his journal, under date of January 9, 1825:—

"In the evening there was a dance in honor of Sir Walter Scott's eldest son, who had recently come from Sandhurst College, after having passed through some military examinations with great credit."

On this passage, Lockhart, who was deeper in the confidence of the family than Captain Hall, remarks in his life:—

"That evening was one of the very proudest and happiest in Scott's brilliant existence. Its festivities were held in honor of a young lady, whom the captain names cursorily among the guests, as 'the pretty heiress of Lochore.' It was known to not a few of the party, and I should have supposed might have been surmised by the rest, that those halls were displayed for the first time in all their splendor, on an occasion not less interesting to the poet than the conclusion of a treaty of marriage between the heir of his name and fortunes, and the amiable niece of his friends, Sir Adam and Lady Ferguson. It was the first regular ball given at Abbotsford, and the last. Nay, though twelve years have elapsed, I believe nobody has ever danced under that roof since then. I myself never again saw the whole range of apartments thrown open for the reception of company, except once—on the day of Sir Walter Scott's funeral. The lady's fortune was a handsome one, and her guardians exerted the powers with which they were invested, by requiring that the marriage contract should settle Abbotsford (with reservation of Sir Walter's own life-rent) upon the affianced parties, in the same manner as Lochore. To this condition he gave a ready assent, and the moment he had signed the deed, he exclaimed, 'I have now parted with my lands, with more pleasure than I ever derived from the acquisition or possession of them; and, if I be spared for ten years, I think I may promise to settle as much more again upon these young folks.' It was well for himself and his children that his auguries, which failed so miserably as to the matter of worldly wealth, were destined to no disappointment as respected considerations of a higher description."

The satisfaction with which Scott regarded this alliance is shown by the terms in which he spoke of it to his friends. He tells them in an amusing, confidential manner, as if he were himself quite impartial, and were afraid the observation should reach the young officer's ears, that "he is as handsome a fellow as ever put foot in a stirrup." The pride and fondness of the father peep out through the shrewd and homely style in which he usually wrote to his acquaintance. To one he said:—

"In a word, Walter, then an awkward boy, has now turned out a smart young fellow, with good manners and a fine figure, if a father may judge, standing well with the Horse Guards, and much master of the scientific part of his profession, retaining at the same time, much of the simple honesty of his original character, though now travelled and acquainted with courts and camps."

Before the marriage, Scott purchased the promotion of his son to a captaincy in his regiment, at a cost of £3,500. Though he had now attained the zenith of his prosperity, he felt himself straitened for money, and, in reply to an application for assistance from Terry, wrote:—

"I have had to find cash for the purchase of a troop for him—about £3,500; *item*, the bride's jewels, and so forth, becoming her situation and fortune; *item*, for a remount to him on joining his regiment, equipage for quarters, carriage, and other things, that they may enter life with a free income, £1,000 at least."

His care for his son was repaid by the domestic happiness he enjoyed with his amiable bride. The regiment of hussars was ordered to Dublin, and

there Scott paid his son a visit in July, 1825, of which Lockhart writes :—

" On Thursday we reached Dublin in time for dinner, and found young Walter and his bride established in one of those large and noble houses in St. Stephen's green, (the most extensive square in Europe,) the founders of which little dreamt that they should ever be let at an easy rate as garrison lodgings. Never can I forget the fond joy and pride with which Sir Walter looked round him as he sat for the first time at his son's table. I could not but recall Pindar's lines in which, wishing to paint the gentlest rapture of felicity, he described an old man with a foaming wine-cup in his hand at his child's wedding-feast."

Scott, with natural complacency, rejoiced at his prudence in allowing his son to follow the bent of his own disposition in the choice of a pursuit. "Thank God," he says, "I let Walter take his own way, and I trust he will be a useful, honored soldier."

This period, the happiest of Scott's life, immediately preceded his reverses. When calamity first came on him he found consolation in contemplating the prospects of his children. In December, 1825, he writes :—

" I have much to comfort me in the present aspect of my family. My eldest son independent of fortune, united to an affectionate wife, and of good hopes in his profession; my second with a good deal of talent, and in the way I trust of cultivating it to good purpose. Anne, an honest, downright, good Scots lass, in whom I could only wish to correct a spirit of satire; and Lockhart is Lockhart, to whom I can most willingly confide the happiness of the daughter who chose him, and whom he has chosen."

His son behaved with equal feeling and generosity on learning the extent of his father's misfortune. "I have received a most generous letter," says Scott in February, 1826, "from Walter and Jane, offering to interpose with their fortune."

The death of Lady Scott followed closely on her husband's ruin, and Captain Scott instantly came over from Dublin to attend his father in his affliction. There is an entry in Scott's diary in May, 1826 :—

" A walk with my sons did me a deal of good; indeed, their society is the greatest support the world can afford me. Their ideas of everything are so just and honorable, kind towards their sisters, and affectionate to me, that I must be grateful to God for sparing them to me, and continue to battle with the world for their sakes if not for my own."

When, in 1831, the sale of Abbotsford seemed inevitable, Scott records an instance of his son's affection :—

" I have a letter of great comfort from Walter, who, in a manly, handsome, dutiful manner, expresses his desire to possess the library and movables of every kind at Abbotsford, with such a valuation laid upon them as I shall choose to impose."

Another entry speaks of his affectionate care of his sisters :—

" Feb., 1831. I executed my last will, leaving Walter burdened with £1,000 to Sophia, £2,000 to Anne, and the same to Charles. He is to advance them this money if they want it; if not, to pay them interest. All this is his own choice."

Scott retained his love for his son to the last. Lockhart, under date of September, 1831, records :—

" Dearly as he loved all his children, he had a pride in the major that stood quite by itself, and the hearty approbation which looked through his eyes whenever turned on him sparkled brighter than ever as his own physical strength decayed. Young Walter had on this occasion sent down a horse or two to winter at Abbotsford. One was a remarkably tall and handsome animal, jet black all over, and when the major appeared on it one morning, equipped for a little sport with the greyhounds, Sir Walter insisted on being put upon Douce David, and conducted as far as the Cauldshiel's loch to see the day's work begun. He halted on the high bank to the north of the lake, and I remained to hold his bridle, in case of any brisk on the part of the covenanter at 'the tumult great of dogs and men.' We witnessed a very pretty chase or two on the opposite side of the water, but his eye followed always the tall black steed and his rider. The father might well assure Lady Davy that 'a handsomer fellow never put foot into stirrup.' But when he took a very high wall of loose stones, at which everybody else *craned*, as easily and elegantly as if it had been a puddle in his stride, the old man's rapture was extreme. 'Look at him,' said he, 'only look at him now! isn't he a fine fellow?' This was the last time, I believe, that Sir Walter mounted on horseback."

Scott was saved the pain of witnessing the death of any of his children; but they dropped into the grave fast after him, none surviving the prime of life. The high spirit of Anne was broken by her father's misfortunes, and the care with which she tended both her parents in their fatal illnesses. She died on the 25th of June, 1833. Her sister Sophia, Mrs. Lockhart, died four years afterwards, in May, 1837. When Lockhart concluded his life of the great author, he said :—

" There remains of Sir Walter's race only his two sons, Walter, his successor in the baronetcy, major in the 15th regiment of Hussars, and Charles, a clerk in the office of her majesty's secretary of state for foreign affairs, with two children left by their sister Sophia, a boy and a girl."

Charles died some years since; but while Colonel Scott lived there were still hopes that the name of the author of "Waverley" would be perpetuated by his descendants. His residence in India, however, appears to have broken a constitution naturally strong, and, before his departure from Madras, it was doubtful whether he would reach England alive. Lady Scott survives him, but their marriage was not blest with any issue.—*Britannia*.

From the *Athenaeum*.

*Memoir of William Knibb, Missionary in Jamaica.*  
By J. H. HINTON, M. A.—*Memoir of William Yates, D. D., of Calcutta.* By JAMES HOBY, D. D. Houlston & Co.

We have placed the biographies of these two eminent missionaries together for the sake more of contrast than of comparison. Knibb in the West and Yates in the East Indies commenced their labors at a time when the missionary cause enjoyed little popularity at home, and was viewed with suspicion, if not hostility, by the colonial authorities. But the causes of the hostility were different as regarded the two opposite regions. The West India planters feared that Christianity and civilization might so raise the character of the negroes as to render them impatient of slavery: the servants of the East India Company dreaded that an attempt to

change their religion might goad the patient Hindoos into insurrection. The former were animated by the ungenerous hatred and craven fear which ever accompany the selfishness of oppression: the latter were influenced by respect for the prejudices of others, and by an honorable anxiety to avoid anything that would hurt the feelings of a conquered population. The two missionaries were suited by nature and character for their respective stations. Knibb evinced the iron energies and indomitable will necessary to brave persecution—Yates exhibited the gentleness by which prejudice is subdued and the scholarship by which respect is conciliated. Knibb fought and conquered—Yates worked and won. The triumph of the former was immediate and decisive: the success of the latter was slow and progressive—but has not been arrested by his death.

Mr. Knibb, from his first entrance on his mission in Jamaica, seems to have fixed his mind almost exclusively on the moral pollution of slavery. Soon after his landing, he writes to his mother:—

“The cursed blast of slavery, has, like a pestilence, withered almost every moral bloom. I know not how any person can feel a union with such a monster, such a child of hell. For myself I feel a burning hatred against it, and look upon it as one of the most odious monsters that ever disgraced the earth. The slaves have temporal comforts in profusion, but their morals are sunk below the brute, and the iron hand of oppression daily endeavors to keep them in that ignorance to which it has reduced them. When contemplating the withering scene my heart sickens, and I feel ashamed that I belong to a race that can indulge in such atrocities. It is in the immorality of slavery that the evil chiefly consists. Leaving altogether the injustice of the thing out of the question, this feature of slavery is enough to make every Christian earnestly wish that it may be forever banished from the abodes of men. I can easily account for persons becoming familiarized to slavery, and have a dislike to the slaves, as they are very trying; but it ought ever to be remembered that this proceeds from the system, and that the owner has a large portion of the blame attaching to him.”

The literary character of the East India missionaries was their greatest aid in changing the reluctance of the authorities into active support of their exertions. Though they made few converts, they diffused much information; and thus knowledge was patronized in one hemisphere as likely to make good subjects, while it was persecuted in the other as tending to produce disobedient slaves. In 1826, the house of assembly in Jamaica passed an act called a “Consolidate Slave Law,” containing several penal clauses against missionary labor. It was disallowed by the home authorities; but the planters revived the persecuting clauses of obsolete acts—and we quote one instance of the spirit in which these laws were administered.

“An excellent young man of the name of Sam Swiney, a deacon of my church in this place, is now in chains for his love of Jesus. During my sickness, he and others, both bond and free, met at my house to pray. Information of this was carried to the magistrates; and though I procured three respectable persons, neighbors, including the head constable, to prove on oath that no noise was made, which the informer had sworn to, the poor fellow was convicted. The magistrate would have it that preaching and praying were the same. I tried to convince him of the difference, but it was of no use; so, for offering a prayer to God, and nothing more,

this poor fellow is sentenced to receive twenty lashes on his bare back, and to be worked in chains on the road for a fortnight. I did all I could to save him, and so did his owner, a respectable gentleman of color, (Mr. Aaron de Leon,) who told the magistrates that he had his permission. Next morning I went to see him flogged, determined to support him as well as I could, however painful to my feelings. There he was, a respectable tradesman though a slave, stretched indecently on the ground, held firmly down by four slaves, two at his hands and two at his feet. The driver was merciful, or every lash would have fetched blood. ‘Oh, what have I done?’ was the only exclamation that escaped from his lips, accompanied by a moan extorted by the pain. He was raised from the ground, chained to a convict, and immediately sent to work. I walked by his side down the whole bay, to the no small annoyance of his persecutors.”

Mr. Knibb published the case and appealed to the colonial office. A subscription was raised in England to purchase Swiney’s freedom; and the two magistrates who had sentenced him were dismissed. The excitement produced in the island by this event and by the rash language of the planters—who declared that the home authorities had become emancipators, and that they would resist the designs of the government by force of arms—was very great.

“The system of extraordinary severity which the planters had adopted with their slaves, gave rise to the following incident. Early in October several negroes came to Knibb as their minister, to ask him if what they heard was true, namely, ‘that free paper was come.’ When asked how they had heard such a thing, their answer was ‘when busha and book-keeper flog us they say we are going to be free, and before it comes they will get it out of us.’ Knibb’s reply was, ‘No, it is not true. Never let me hear anything of this again. When did busha tell you anything for your good? There is no free paper coming. Go home, and mind your master’s work.’ At that time, however, he had no suspicion of a revolt, nor did those who had thus spoken to him ever join in it. As Christmas drew near, the irritating elements which the planters had diffused throughout the slave population began to do their work. Under a full conviction that the king had made them free, it was suggested by a slave named Sam Sharp, that they should not work after Christmas without wages; and in order to engage many persons in concert for this purpose, meetings were held by him on a plantation called Retrieve, from about the middle of October.”

The insurrection of 1832 followed; and Mr. Knibb narrowly escaped the fate of missionary Smith. Fortunately, he was to be tried by a court of justice, not by a court-martial; and his enemies dreaded an encounter where they would be bound by the ordinary laws of evidence. Their charges against the missionaries of having instigated the insurrection were so widely circulated that Mr. Knibb resolved to return to England to refute them. Not content, however, with defence, he commenced a tour of anti-slavery agitation in England, which was eminently successful. The advocates of slavery, alarmed at his progress, employed Mr. Peter Borthwick as their champion. The issue of the contest was not doubtful. Mr. Borthwick retired, substantially rewarded by the West Indians;—Mr. Knibb continued the agitation to a triumphant issue. He returned to Jamaica a conqueror;—the planters who had deemed it a great triumph to

drive him to England having only placed him in a position where he could most effectually subvert their favorite system.

We have no wish to revive the forgotten controversy on the apprenticeship system. It was a signal and mischievous failure. The era of complete emancipation arrived—and was celebrated by the liberated negroes with peaceful solemnity: but the defeated advocates of slavery made several efforts to excite the new peasantry to some act of outrage which would afford a pretext for coercion. The artifice is a common one in other lands than Jamaica; and we, therefore, extract a portion of the narrative of one of these attempts.—

"At an early hour on Saturday last, it was generally known that some persons had determined to interrupt the peace of the town (Falmouth) by hanging the Rev. Mr. Knibb in effigy, in front of his chapel. The knowledge of this fact aroused the indignation of the members of his church, who immediately determined to prevent the design from being carried into execution. In the course of a few hours the town was filled with people from all quarters, and considerable excitement prevailed in consequence of a general belief that Mr. Knibb was to be hanged in reality. The reverend gentleman, who had been absent since Thursday evening, was, on Saturday, engaged in religious services at Waldensia chapel, (about ten miles from Falmouth,) when he received a letter by express, from Carlton estate, of so alarming a nature as to induce him to come into the town, for the purpose of endeavoring to allay the excited feelings of the people connected with his ministry. On his way down he was met by a number of armed persons, all of whom appeared to be laboring under the impression that he was to be waylaid and murdered. He succeeded in persuading them to give up their weapons, which he deposited in the body of his carriage. Every attempt, however, to persuade them to return to their homes was unavailing. They were determined, they said, to protect him at the sacrifice of their lives. On his arrival at the mission-house, Samuel Magnus, Esq., one of the magistrates of the parish, called, and assured Mr. Knibb that he had adopted such measures as would prevent the party from hanging the effigy. The people were perfectly satisfied with an explanation given them in the Suffield school-room, and quitted the town with the promise of persuading those whom they might meet on the road to return homewards. Notwithstanding all the excitement that prevailed, it is gratifying to state, that not a single breach of the peace was committed."

Knibb lived down this hostility; and a little before the close of his life was solicited to join his former enemies in resisting the repeal of the differential duties on foreign sugar. Many of his political opponents tendered sympathy and condolence to his family when he sank under his labors; and most of the Jamaica journals which had assailed him living paid an honorable tribute to his memory after death.

The peaceful literary labors of Dr. Yates exhibit a very different picture from the agitating career of Mr. Knibb. The exertions of the former as an oriental scholar have made his name better known than has his success as a missionary. But the agencies of both these men have reversed Mark Antony's aphorism: "the good" which they achieved "lived after them,"—"the evil" of the controversies in which they were engaged has been "interred with their bones."

We must not conclude without pointing out a

serious mistake committed by Mr. Knibb's biographer. He describes Thomas Hood, instead of Theodore Hook, as the advocate of slavery in the *John Bull*. To oppression of all kinds Hood was as strenuously opposed as any man in the empire;—ever a champion of mercy and an apostle of freedom.

#### PRUSSIA AND ITS ESTATES.

With every wish to join in approval and encouragement of the king of Prussia's essay of a representative system, we cannot believe that the summoning of the national estates once in four years, to consider loans, audit revenue accounts, and petition upon non-financial subjects, will attain any of the great results of constitutional government.

The results to be looked to by the sovereign of Prussia are two;—first, the contentment of his people, the turning away the thoughts of a numerous, enlightened, and powerful middle class, from a state of quiet but dangerous discontent, to satisfaction, trust, and hope in the monarchy and its institutions. The king of Prussia must satisfy public opinion. For that public opinion is armed, educated, has no aristocracy, no hierarchy to resist it, or summon the peasant class to join in keeping down the citizen. The entire population of Prussia has schooled and drilled together, and the institutions of the country thus create an homogeneity amongst its sons, from whence springs that great unanimity of feeling, which is so formidable in France, and which no government, no system, no power could long withstand. Public opinion in Prussia must be satisfied, in order to ensure its tranquillity. The present gift of the king will not do this. The gift was indeed well meant. If limited, it was thus kept narrow as much out of fear of alarming powerful neighbors, as out of making domestic liberalism too strong. The words with which the gift was accompanied were ungracious, but the same motive prompted the king's harshness. The ungraciousness has, however, been done away with by the king's reply to the address, and even some of the narrowness of restriction removed. For the king declares he is for progress, and admits the development of institutions. There is therefore room for hope. But if that hope be told to lie by for four years, it will turn to impatience, and the monarch will have made a liberal move to no purpose.

The second result to be attained by Prussian constitutionalism, can only be reached through the first; this is the placing Prussia and its king at the head of Germany, of its public opinion, its desire of freedom, its resolve to possess and to wield a common nationality. This cannot be done by giving to Prussia a constitution, in which the freedom of speech and extent of influence are less than in the constitutions of the minor states. It has been seen, indeed, that these constitutions of the minor states are of little avail, as well as any struggle after freedom in such states, and for this one grand reason, that the German diet overrules and over-rides both governments and assemblies in the minor states. The only hope, therefore, is in a large state, like Prussia, becoming constitutional, and thus bringing an adequate force to bear against the dictatorial despotism of the German diet.

An example of the interference of the diet is sufficiently apparent in one of the very questions connected with representative government, the liberty of the press. The king of Prussia is not master in

his own dominions on the subject. He is bound not to give offence or alarm to the other states of the confederation. It was indeed clearly seen, at the very birth of this confederation, that one state could not be despotic and the other constitutional, for it would lead to eternal collision and difference; so it was decreed that all should have constitutions. This fundamental law, passed in a time of popular enthusiasm, was set aside, and is only now coming into vigor. But it requires wisdom and moderation to effect the change. Ere the Prussian liberals can succeed in winning their full rights from the Berlin cabinet, the Berlin cabinet must win its freedom from the German diet. In order to this, the Prussian monarch and government must not be indisposed or disgusted with their first liberal essay. For in that case they might fling themselves back into the iron arms of the Frankfort diet, and aid in forging new laws and fetters for the enslavement of the German race. No doubt the Germans can and will conquer every obstacle in the attainment of freedom; but it is better that this should be done in a short time by pacific means, and by the legitimate instrumentality of a king and a kingly government, than by insurrections and their suppression, their bursting forth again, with all the alternations of which we have seen examples in so many countries.

It therefore must be admitted, that, considering the connection of Prussia with the German diet, its proximity to Russia, and at the same time the bad feeling and old enmities that exist between the Prussians and the French, the only constitutional country on the continent, there are a great many reasons and excuses for the government of Prussia's displaying a more than usual degree of diffidence and caution in its first step towards constitutional government. Let us hope, that it is these necessities which hold it back for the time, and that, as they are overcome, the monarch will admit and act upon the equally urgent necessity of satisfying the just claims of his people, and give them a real parliament every year.—*Examiner*, 1 May.

#### CAPTAIN WARNER'S LONG RANGE.

CAPTAIN CHADS and Lieutenant-Colonel Chalmer, the commissioners appointed by government to witness the experiments with the "long range," have delivered their report. They state that it having been found necessary to learn some portion of Warner's secret, they found, on its being partially revealed, that the long range is effected by means of air-balloons, from which shells or other destructive missiles are dropped. Captain Warner stated that by placing these shells in frames, and by means of a regulated fuse, he could cause them to descend, or drop, on the object sought to be destroyed, in flights of 100 if necessary, and of the weight of 500lbs. each. "We were not," continued the commissioners, in the mildest form in which extreme astonishment can be expressed—

"prepared for the mode of operation thus disclosed to us, nor, upon our first impression of it, could we consider it capable of realizing the 'certainty of aim, power of using it under all circumstances,' and 'impenetrable secrecy,' which Captain Warner has in his printed correspondence, and in his intercourse with former commissioners, so confidently ascribed to his 'long range.' Most anxious to bring this important and long-pending question to a settlement, and considering that we are acting

in the spirit of our instructions, we proposed to Captain Warner that he should prepare a balloon of such ascending power as to be capable of raising forty-five projectiles of 10lbs. weight each, without containing any explosive substance; that he should so manage the experiment as to deposit or drop fifteen of these projectiles at or round an object placed at four miles distant from the point of starting, a second flight of these projectiles (fifteen) at four miles and a half, and the remaining fifteen at five miles."

This Captain Warner readily undertook to accomplish, and stated that the expense would be about £1,300, which sum was eventually granted to Captain Warner by the government, on his giving certain securities for the due performance of the experiment.

The neighborhood of Southend, Essex, was at first chosen, but on examining the proposed ground certain objections were presented, and the locality eventually fixed on was Carrnock Chase, the property of Lord Anglesey, in Staffordshire, for the preparations; and a tree called the "Fair Oak," in Haywood-park, three miles distant, as the mark for the first flight of shot. On the morning of the 28th of November, Captain Warner announced that everything was ready. By three o'clock Lord Ingestre (who acted on Warner's behalf) and Captain Chads had taken their station at the "Fair Oak," and Lord Anglesey and Lieutenant-Colonel Chalmer at a cross road about a quarter of a mile near Haywood-park, all anxiously watching for a pilot balloon which was to be sent up ten minutes previously to the "long range" balloon making its appearance. The commissioners tell the rest of the story in the following terms:—

"Half past three o'clock had arrived, and all parties waited in anxious expectation, directing their attention towards Haywood-park. At a quarter past four o'clock Lord Anglesey left the ground. The sun had set, it was growing dusk, and we gave up hopes of the experiment taking place, when at twenty minutes after four o'clock Lieutenant-Colonel Chalmer perceived the balloon at some height coming from Haywood-park, and, as he thought, directly towards him. He called out loudly, which soon brought Lord Anglesey back to his old position. The balloon continued to approach, its elevation increasing considerably; and it continued visible to Lord Anglesey and Colonel Chalmer for more than twenty minutes, taking a more easterly direction (many points wide of the Fair Oak,) till it disappeared, from its great elevation. Neither Lord Anglesey or Lieutenant-Colonel Chalmer could distinguish anything to fall from the balloon; and they had doubts whether it was the pilot or the large balloon they had seen. Lord Ingestre and Captain Chads had given up all hopes of seeing the balloon that evening, when their attention was called to it by the shouting of Lieutenant-Colonel Chalmer; it was at a considerable height, drawing on towards south-east, and rising quickly, till lost sight of by them. When moving on to join Lord Anglesey, they heard a sudden rushing noise to the eastward of them, but nothing was perceptible; and Lord Ingestre and Captain Chads had also their doubts as to whether the balloon seen was the one containing the shot or only the pilot one. Captain Chads and Lord Ingestre rode to Haywood-park, and there ascertained that it was the balloon with the shot that had been seen; and it being now late, and too dark to make search for the projectiles, (or shot,) the party left the chase, and returned home."

The next day was partly spent in seeking for the shot over the ground, but without success :—

" At about four o'clock Lord Ingestre proposed to drive Captain Chads and Lieutenant-Colonel Chalmer in his chaise, through Rugeley, on their way back to Beaudesert ; and having ascertained that the balloon had been conveyed to the Bell Tavern, they stopped there to obtain information. On going into the town they were met by a person whom Lord Ingestre appeared to know, and who informed him that the balloon had fallen about half a mile short of Rugeley the preceding evening ; that some laborers had got hold of it, and had given it up to a gentleman for a guinea ; that he (the person who addressed Lord Ingestre) had claimed it as his own, on which disputes arose about it, and some alarm had spread over the village, as some powder and nine of the shot were found attached to the balloon and there was also a suspicion that some one had gone up with the balloon, and had been killed. The police were sent for to take charge of the balloon, and directed by a magistrate to retain it. Lord Ingestre told the police that he was a magistrate, and that there was nothing improper intended, and to give the balloon up to the person claiming it, and that he would be responsible for their so doing ; to which they assented. This person then went with Lord Ingestre and Captain Chads to a stable ; showed them the balloon, and explained the circumstances of its ascent, and was quite conversant upon the subject. On Lieutenant-Colonel Chalmer entering the stable, he recognized this person to be one of the Messrs. Green, (the aeronauts,) and who stated that the balloon was his property, and named the ' Albion.' Mr. Green was passing under the name of Brown, in order to keep all proceedings as to a balloon being in the neighborhood a secret. Lord Ingestre said that further search should be made by the keepers for the shot, but that then we could do nothing more. We left Rugeley for Beaudesert, and on arriving there we all had an audience with the Marquis of Anglesey, reporting what we had seen and heard, Lord Ingestre (Captain Warner's own nominee) acknowledging that he considered the experiment a failure, in which Captain Chads and Lieutenant-Colonel Chalmer fully coincided."

Several days after Lord Anglesey's head game-keeper found eighteen shots—five within one hundred yards of where the balloon fell ; eight at about three miles from Haywood-park ; and five one mile from whence the balloon started. The penetration was from one to four feet, in hard gravelly soil.

Thus ended the experiment of the " long range," about which so much public interest has been excited.—*Britannia, 1 May.*

From Punch.

#### CAPSICUM HOUSE FOR YOUNG LADIES.

##### CHAPTER II.

###### MISS GRIFFIN UPON THE TEA-POT. "MORALS AND EXAMPLES." WASPS AND HUSBANDS.

Miss Griffin was about to plant her foot upon the door-step ; she paused. " With your leave," she said, " we 'll take a turn down the Tea-Table walk. A little more air will do me good ; for that Miss Fluke does so distress me ! Well ! I suppose I must go through with it ; but sometimes I fear I have hardly strength for my mission."

Anxious as we were to enter Capsicum House—the great vestibule, as we considered it, to all the domestic virtues—nevertheless, we suppressed the

wish with the strong hand of gallantry, and, with Miss Griffin turning, turned about.

Three or four minutes, and we entered Tea-Table walk. Here, as in other parts of the garden, there were household lessons for the female mind in the greenest and fullest leaf. In one bed was a most charming tea-service, in the tenderest colored and most delicate box ; whilst on either side were two huge bushes, trimmed and taught to shoot as tea-kettles. They struck us with a blow of fine art. " How noble ! " we cried.

" What ! the kettles ? Yes, they are fine," said Miss Griffin, with humble, chastised pride ; " the kettles are natural, and when the bees are buzzing about 'em you 'd positively think they boiled."

" And a complete tea-service ! " we cried ; and admiration simmered in our soul.

" Everything but the spoons," remarked Miss Griffin ; " but all in good time. As I say to the girls, be patient ; patience is a virtue—peculiarly a female virtue, for though it is greatly encouraged, it meets with so little reward. Pardon me, my dear sir," said Miss Griffin, laying the sprig of parsley very gently on our coat-sleeve, " but I feel that I can talk to you as to a sister."

We made no reply to this ; but it was plain that Miss Griffin saw doubt rippling the corners of our mouth.

" Pray understand me," she quickly followed. " I mean, I am so impressed—have such a rock-like confidence in your sympathy with women, in their great social struggle with their natural enemies—"

" Natural enemies ! " we exclaimed. " Impossible ! "

" Oh ! " cried Miss Griffin, " it 's no use denying it—none at all, now. For six thousand years—and I don't know how much longer, according to Doctor Buckland—all your sex have worn a mask, and gone under a false name. But it is my mission to discover you. In Capsicum House things are called by their proper titles. In this place Man"—added Miss Griffin, solemnly—" so long disguised, is taught to be what he is, a natural enemy. And you know you are."

There was an emphasis in this that enforced a polite confession. We therefore bowed.

" To be sure," cried Miss Griffin, " I knew I might rely on your frankness. Well, sir, I will be equally open. The whole aim and tendency of the Griffinian system is to confound and conquer this natural enemy ; or, as I once happily observed to the girls in this very walk, to turn the tea-tables upon man."

" The happy thought," we observed, " was no doubt suggested by the genius of the place. Nothing can be more charming, more natural, than this evergreen service. What cups and saucers—what a tea-pot ! ! "

" I assure you, my dear sir," said Miss Griffin, " in the depth of winter, walking here, you may, with a very little fancy, absolutely smell the toast and muffins. Once a week in summer, I deliver a lecture here ; I have a complete series—*On the Use and Abuse of Tea in connexion with the Social Position of Women.*"

" A large subject," we observed ; " a subject with many branches."

" Not a tree in the garden has a greater number," cried Miss Griffin, a little vivaciously. " I look upon the tea-pot, properly directed, as a great engine in the hand of woman—an engine, sir, of subjugation of her natural enemy."

"Can it be possible? Is it really so?" we said, a little doubtfully.

"As I observed," said Miss Griffin, "I can—I am sure of it—speak to you as to a sister. Such a large, and pure, and tender heart as you possess is quite thrown away upon a man. I know all your goodness, my dear sir; and this I will say—you deserve to be nothing less than one of us."

At this we made the lowest of bows, all but touching the gravel-walk with the tips of our fingers.

"And some afternoon, when I'm upon Tea, I trust I may be honored with your presence. If I am proud of anything, it is perhaps my Gunpowder Class, sir. The classics—people who never knew what real Pekoe was—talk of their magic herbs, and philtres, and love-charms. Now, sir, every wife with a tea-caddy may be more powerful than any good-for-nothing goddess of 'em all. Let the young wife fascinate the husband with the tea-pot—let her only bring him into habits of intoxication with tea—let her, so to speak, make household honey-suckles clamber up his chair-back and grow about the legs of his table—let the hearth-rug be a bed of heart's-ease for feet in slippers—and the wickedness of the natural enemy must die within him, and, as I say, his subjugation be complete." Unconsciously, we shook our head. "Don't tell me," said Miss Griffin; "kindness is the true killer. I often illustrate the agreeable fact; for in Capsicum House no natural object is lost upon us. For instance, last Tuesday, whilst the Milk Punch Class was on, an enormous wasp came like a Lilliputian dragon into the room, and flew from girl to girl. Immediately, they began to scream. I own it; this is the sad weakness that I have to fight against; but, somehow, girls consider screams as property they're born to. Some of the girls flew at the wasp with handkerchiefs, and that little rebel Miss Fluke seized a fire-screen. Feeling that the time was come for me to show my energy, I exclaimed with all my natural vigor, 'Silence, ladies! silence, for a moral and an example!'—my usual mode of speech when about to submit any natural object to a social, or, I should rather say, to a conjugal illustration.

"A moral and an example!" cried the girls, and; except that Fluke, they were still as mice.

"Bring me the salad cruet," was my command, and, with a thought, the salad cruet stood upon the table. "Now, young ladies," I observed, taking a pen; "now for the moral and example. You are here to be finished for sensible, affectionate, but above all, controlling wives. You are here to learn how best to subdue your natural enemies, that is, to govern the men who may become your husbands. Yes, ladies,—for somehow (I can always tell) I felt the flow of words was coming, and it was not for me as a woman to stop it—"Yes, ladies, the Griffian system will teach you how to control and overthrow your tyrants. Man, marrying us, puts a gold ring upon our third finger, and, in the arrogance of his heart, makes us, as he thinks, his blushing captive. And shall not man, also, wear a ring—our ring? Yes; he shall!" Here that Miss Fluke proposed three cheers, but, with a look and brow of thunder, I stopt her. "If," said I, "we must wear his ring upon our finger, let him—and not know it, poor wretch! for that's the true triumph—let him wear *our* ring in his nose." Here Miss Fluke jumped upon a chair and huzzaed, and—well, this time I did not attempt to suppress the natural burst of delight so honorable to their feelings—all the other girls joined in the shout.

"A ring in his nose," I repeated; "not the bit of shining gold that declares our slavery, but an invisible, a fairy ring, that—like a fish with a hook—he knows nothing about, only that he must follow wherever it pulls him. Bless you, my dears! there's such rings in the noses of thousands of husbands, though—for all they shave every morning—they never see 'em."

"And, dearest madam," asked Miss Pebbles, a girl I have the greatest hopes of—"dearest madam, how is the nose of our natural enemy to be rung?"

"Listen," said I, "listen and attend, and you shall have a moral and an example. When the wasp now in the window entered the room, you flew at it with all kinds of violence. I wonder it did n't sting every one of you. Now, in future, let a wasp when it comes have its little bout, and make its little noise. Don't stir a muscle—don't move a lip—but be quiet as a statue of Venus or Diana, or anybody of that sort, until the wasp seems inclined—as at this moment—to settle. Then do as I do now." Whereupon, dipping the feather end of the pen in the cruet of salad oil, I approached the wasp, and in the softest and tenderest manner possible, just oiled it upon the body—the black and yellow, like grooms' waistcoats—when down it fell, turned upon its back, and was dead in a minute. "There, girls," said I, "see what kindness, what a little oil does. Now, here's my moral and example. When a husband comes home in an ill-humor, don't cry out and fly at him; but try a little oil—in fact, treat your husband like a wasp."

CHINESE BURIAL-PLACES.—No people profess so much veneration for the memory of their fathers as the Chinese; and the worship of their tombs is by far the most solemn, and apparently sincere, ceremonial in the shape of religious worship they exhibit. In order to perform its rites, men (women take no part in it) who emigrate to distant lands often return, at much expense and trouble, to the place of their birth; and their fond clinging to the memory of the dead, more than love for its institutions, seems, and is said to be, the strong bond which binds the Chinese to their country. But they have no consecrated place of interment; and, if they have any rite analogous to episcopal consecration, it must be so simple and easily executed as to have effect anywhere. At any rate, they have no accumulation of graves in particular enclosed spots; they do not set apart a few acres for that purpose and surround them with walls, separating the silent tenants from the living world, and forming a great prison-house for the dead. On the contrary, every one chooses the spot he likes best for the final resting-place of those he loved. The country residents bury their dead on their own land, often very close to their own dwellings. On the hill-sides, especially in stony, barren places, are seen tombs and graves, thinly scattered in rural districts, and more numerous in the neighborhood of towns. The choice is wise, and its effects anything but unpleasing to the eye. The tombs are often of porphyry, finished with much minute chiselling, and sometimes in tolerable monumental taste. Placed on rocky eminences, often in particularly picturesque situations under the shadow of cedars and cypresses, they present every here and there objects of pleasure, perhaps profitable, contemplation.—*Wilson's Medical Notes on China.*

To say "Man may seek truth not so much in order to find it as to exercise his faculties in the search, and to strengthen his mental powers," is to say, "Take food, not that you may be nourished thereby, but that your teeth may be sharpened."

From the New Monthly Magazine.

## THE LILY HAND OF RIMINI.

NINA lay in her bed. How "bravely and Cytherea-like she became it," angels may tell better than mortals.

The clock had struck twelve. Nina had laid down her book—the drowsy charmer she had called to her aid to lull her to sleep. The flame from an alabaster lamp showered down its chaste unflickering beams; wooing, soothing. The last embers died away in the hearth, diffusing their genial warmth without a crack or murmur. Not a curtain was seen to heave, not a breath to stir the darkness of that silken apartment.

Nina's kind hosts were fully aware of the treasure they harbored under their roof. More than maternal care had presided over her comforts, strewn her couch, and smoothed her pillow. Her aunt herself, the lady of Professor Mascagni, had shown the lovely girl to her chamber, disrobed her, trusting no one else with the offices of her waiting-maid. She hung in fond admiration over her as she bade her "good night," pressed her matronly lips on her brow, and called down Heaven's blessings on her dear head.

Professor Mascagni was proud of his guest. Long and earnestly had he sued for her, half-borrowed, half-stolen her from her anxious parents at Rimini. He had torn her from her mother's embrace, conveyed her home in triumph, and secured her within the ivy-grown walls of his old-fashioned suburban paradise near Bologna.

The professor had some design on his niece, and the latter was not without a boding heart about it; for she knew him to be an enterprising match-maker—Professor Mascagni had attained an European reputation as an anatomical discoverer. Ease and affluence had waited on his exertions, he rested now under the shade of his laurels. He was a gentleman-surgeon, and only practised as an amateur. His wife, a lady of the noble house of Lanzi, had raised him in rank and wealth, and it was precisely for the gratification of this proud dame, that Nina, her niece, found herself domesticated amidst the cool groves and cooler arbors of the professor's villa. A flirtation was to be encouraged between the beauty of Rimini and a Roman youth, Lorenzo da Rizzo, a student of the university, a willing captive long chained to her chariot.

Was it the strangeness of the bed, or was it the closeness of the room, the glare of the lamp and heat of the fire that kept Nina de Lanzi so late awake in her bed? Was her heart fluttering with the anticipated meeting of the handsome adorer she had long affected to spurn at home? or did her brain reel with the sounds and sights of the ball that her good hosts had announced in her honor for the following night? Or had the book she had just thrown listlessly aside conjured up images that still wrought on her nerves, and haunted her in her sleeplessness? Or might there be other motives besides?

It was a lovely object to look upon. Her blooming countenance, bathed in the faint gleam of that subdued light, glowed with its warm incarnadine, like a spring flower steeped in liquid pearl. Her dark eyes flashed fresh and lustrous in the fretting of that prolonged unrest, as they watched the last sparks of the waning fire. Her round right arm, bare to the shoulder, was thrown negligently above her head with the snowy hand slack and open—that hand the pride of her beauty, the loveliest part

of a person, every feature, every form of which was transcendent loveliness.

The worship the Spaniards pay to the ankle of their brown beauties, is, in Italy, addressed to the color and shape of the hand. One of the old Italian rhymesmiths indited a whole *canzonière* to the "Bella Mano." Nina's hand, unmatched in Northern Italy, went by the name of "The Lily of Rimini."

Presently her face languidly emerged from the pillow. The shade of the drooping lashes was partly lowered on the weary orbs which they curtailed, the dews of incipient slumber stood on the downy cheek, the breath came slower and heavier, and the lips fell asunder.

She dreamt ere she slept. The tide of flitting emotions hardly ruffled the ineffable calmness of those composed features. The breath of heavenly purity, of coy and timid tenderness, of all maidenly truth and holiness issued from the fragrant mouth. Surely angel's heart never heaved under a gentler bosom.

But lo! on a sudden the slumbering beauty is seen to writhe throughout her frame. A cold, humid, clammy sensation sends a chill through her veins. The icy palm of a shrivelled hand presses hers vehemently, convulsively. It was but one instant, and two lips frozen and stiffened as if by death rested with lingering fondness on the clasped hand.

Seconds elapsed ere instinct of terror prevailed over the trance of surprise. But Nina de Lanzi was possessed of a more than feminine daring spirit. She did not scream. Her heart rebelled against the evidence of her senses. By a sudden effort she roused herself and started up in her bed.

Up she stood, stifling the throbs of her bosom, gazing boldly, steadfastly around.

Her eye glanced behind. The door—she saw it—was gliding noiselessly on its hinges, as if closing slowly, stealthily on the heels of a receding person.

She saw it distinctly. She was but too wide awake. The moisture of death oozed from her temples. She felt a choking at her throat.

Her fingers were still white—numbed almost with the deathly pressure they had lately undergone, and a livid impression still marked the spot where the icy lips of the phantasm had clung.

A reaction of crushing, overwhelming terror now succeeded to that first outburst of animal spirits. With her eyes riveted on that dreaded door, she sat up, spell-bound, in her bed, striving to nerve her heart against the chances of a second intrusion; but long and tedious rolled the hours; the morning dawned gray at the casement, and the door gave no sign.

Courage returned with daylight. "And did she suffer her imagination thus to gain the upperhand of her better understanding? And could nightmares get so powerful a hold on the senses? Could illusion continue after reviving consciousness? And was her hand never before numbed by cold or by the straining of an awkward posture?"

By these and similar arguments she laughed her own fears to scorn. It was a faint laugh, nevertheless; nor was it without a shudder she went through the redoubted door that played such awful freaks at midnight.

The following day was merry and sunny. There was a long stroll with the professor's children at the Montagnola.\* Then romping and frolicking in

\* The public promenade at Bologna.

the garden at home. Then a hasty dinner; then rigging and decking, smoothing and trimming for the evening show. And lamps were lighted, guests crowded in, and Nina de Lanzi stood up with her partner.

From the moment she quitted the haunted apartment she had not had one second's leisure to bestow on her nocturnal adventure.

The lovely Nina stood up with her partner. The professor's lady had that evening surpassed all her former achievements. The *élite* of Lombard loveliness was here, and the sprightly students of the university, the young blood of the land, doing homage at their feet.

Nina de Lanzi and Lorenzo da Rizzo led the van of the first quadrille. The latter bright, manly, beaming, elate with the excitement of happy affection and gratified vanity; the former, a somewhat short, but unspeakably graceful figure, shaped, created, as it were, for the dance, at that early stage of the festivities still pensive and feverish with the unrest, with the vaguely remembered visitation of the previous night.

She soon rallied, nevertheless. Her head rose and was thrown backward with a half disdainful toss, as she caught the first notes of the inspiring strain from the orchestra. Her rich hazel hair, in a maze of ringlets and tresses, bounded witchingly on her rounded shoulders, while her hand—the Lily of Rimini—it was seldom that she condescended to imprison it in white kid—waved gracefully in the air towards the youth of her choice.

Her truant partner had, however, but for one second deserted his post. Some little difficulty in the distribution of the following couples had occasioned a momentary delay. At a beck from the lady of the house, Da Rizzo had stepped up to her to give her the benefit of his advice. His absence was unnoticed by Nina, who, with averted head, continued to hold out to him the fair prize so ardently solicited.

Suddenly a shriek of anguish and terror, loud above the din of festive instruments, rang through the crowded apartment.

An awful pause ensued: every eye was instantly turned upon Nina.

She stood alone at her place, gazing vacantly at her hand. The fingers' ends were white, the nails blue, as if with intense cold. The hand of death had been once more busy with them.

"Who has done it?" she gasped, "what sad mockery is this?"

The whole company crowded up to her, aghast in the sympathy of her own consternation.

The attentions of the multitude oppressed her. She stamped impatiently. She was conveyed to a cooler room. In a few minutes she had recovered thoroughly. She asked to be allowed to retire. Remonstrances were all in vain—irritated her. The dreaded apartment—she was too proud to evince her repugnance—was hastily got ready for her. Half-playfully, half-forcibly she secured a bed-fellow in the person of Juliet, the eldest of the professor's children, a girl aged twelve; and her lamps were carefully trimmed; the fire blazed in the chimney.

Her anxious hostess lingered in the room, till for the third time bidden to go. Little Juliet, nothing loath to give up her juvenile beaux, had already gone to roost. Nina showed her aunt to the door—listened to her retreating foot-fall; then carefully locked and bolted the door.

Almost blushing with shame, she cast a hurried glance under the bed; she peeped behind the win-

dow-curtains. She came back rubbing her hands, and breathing freely. Yet two minutes, and she was in the arms of the already unconscious Juliet.

The company in the hall were bewildered; the notes of the violin grated in every ear. Dancing became impracticable. Conversation was carried on in ominous whispers.

Twelve o'clock had struck. The fire burned still. The lamps shone wan and faint. The two girls lay grouped in each other's arms. Girls have a peculiar talent for grouping. Arms and necks, all the soft limbs of the young creatures were coiled and twined together, as if they lay for models of the graces.

The warmth of their young blood was diffused all over the room, and the fragrance of their breath. Their cheeks glowed in contact, and their lips were glued to each other.

Both were quiet; but whilst one was many fathoms deep in the sleep of blessed innocence, the other's eyes glared uneasy and fitful as if constantly on the watch for coming terrors.

Poor Nina was game to the last. She would not fear, would not believe: she cursed the morbidity of her fancy.

"What?" she said, "ghosts from the grave to do homage to the Lily Hand of Rimini?" "Tis conscience maketh cowards of us all: and what did conscience reproach her with? The heart-ache, forsooth, some silly fool declared the sight of her gave him! Ha! ha! It was all the work of weariness, of illusion.

"And yet the ball-scene! was it also a freak of the imagination? mere jugglery? That sudden discoloration of the tips of her fingers—was any one present aware of it? Could spectres haunt us in a crowd?"

With these reasonings she soothed herself, attuned her mind to repose and security. "After all," she concluded, "Juliet was there."

The presence of an infant, nay, of a lap-dog, is enough to allay supernatural fears. That poor sleeping, defenceless being broke through the awfulness of Nina's solitude. She pressed the little bed-fellow in her arms, and the storm in her bosom subsided.

The heightened color in her face; the veil lowering on her eyes, the flutter and chaos of her thoughts, were hailed by her as symptoms of incipient somnolency.

She disengaged herself from the too close embrace of her little friend: buried her face in her pillow, and composed her limbs to her habitual ease.

Her manœuvres, however careful and light, did not fail to produce analogous movement on the part of the clinging girl. Her little hands, both of which were turned round Nina's right, with all the fervor of sisterly tenderness, at once relaxed, and the arm of the latter thrown fondly over the child's neck, remained thus hanging in the air, almost outside the bed.

At this same moment, the released hand was clasped in another's. The sepulchral cold again crept from the fingers' ends to the very heart's blood. Once more the earthy touch of a dead man's lips left its mark on the dimples of the Lily of Rimini.

This time Nina, though only half in her senses, was more on her guard. She rushed from her place, darted from her bed, and as her eye forthwith directed itself to the fatal door, once more, by some imperceptible impulse, it seemed to fall to, following the invisible intruder in his retreat.

We have described Nina de Lanzi as a high-minded, stout-hearted girl. Yet the reader will

have some difficulty to credit the daringfeat we are about to narrate.

By a degree of elasticity and presence of mind rare in a hero, she rose superior to her first stress of dismay. She seized her lamp with unquailing hand—with a steady step she made for the door.

It would be difficult to describe how she opened it. By an unconscious act of volition, the door yielded to her touch, and she found herself on the outside.

All was still there, dark and lonely. The buzz of the revellers from the state apartments came faint, stifled by distance.

The professor's villa was a straggling mansion, all on one floor. Nina's chamber, the best spare bed-room, opened into a square landing. The door on the right led to the state apartments, and from these the hum of confused voices was audible. On the opposite side was a long gallery, and at the termination of this a dark door loomed ominously in the distance.

Nina stepped out into the landing. Only for two or three days an inmate of the house, she allowed herself to be guided by instinct. She crossed the landing and darted into the unknown corridor.

The objects around danced and swam before her eyes. The door at the end of the gallery seemed to swing on its hinges; and when the venturesome girl reached it she found it ajar.

There was a short pause. A qualm of irresolution sickened her at heart. The lamp shook in her hand.

Once more she rallied: with her bare foot she pushed open the door. She stood within the threshold.

The floor was strewn with sand, which grated under her feet. The walls were bare, dank: a long table, covered by a white cloth, stood in the middle.

The girl went up to it. She lifted up the sheet.

The shrunken features of the dead were grinning before her. She was in the professor's dissecting-room.

It was the corpse of a man in the prime of youth. It came nameless to the house, merely labelled No. 373, from the hospital. Busy with his festive preparations, Professor Mascagni had not even found time to pay a visit to the "subject" in his laboratory. He was a stranger in town, unknown at the asylum, where he had laid himself down to die.

Happy and young, Nina de Lanzi had never before looked on the solemn aspect of death. She gazed at it in speechless fascination. In her startled fancy the body seemed instinct with life. It breathed; its chill breath reached her: the lips quivered—they glowed, yet, with the voluptuousness of the kiss they had stolen.

A piercing shriek, a heavy fall on the floor, soon caused a rush from the alarmed revellers in the hall. Nina revived after a few minutes; but her entire recovery from the ghastly scene was the work of years.

Two of these were spent with her mother at Rimini, ere she felt sufficient strength to stand up at the altar, to utter the solemn vows which were to bind her to the fortunate Lorenzo da Rizzo.

Even in that occurrence, a misgiving, as if the warm hand which clasped hers might be superseded by the icy fingers of death, irresistibly crept to her heart. Deadly paleness stood on her cheeks, and she glanced uneasily around. But two years' burial had, as it seems, cooled the posthumous admiration of the dreaded No. 373, and the bestowal of the "Lily hand" was suffered to go through without further interruption.

Even after many years of wedded life, Nina's hand—we will not venture to say how carefully it lay hid under the blankets—was never exhibited ungloved in a ball-room.

**THE WRECK OF TURNER'S PICTURES.**—No picture of Turner's is seen in perfection a month after it is painted. "The Walhalla" cracked before it had been eight days in the academy rooms. The vermilions frequently lose lustre long before the exhibition is over; and, when all the colors begin to get hard, a year or two after the picture is painted, a painful deadness and opacity comes over them, the whites especially becoming lifeless, and many of the warmer passages settling into a hard valueless brown, even if the paint remains perfectly firm, which is far from being always the case. I believe that, in some measure, these results are unavoidable, the colors being so peculiarly blended and mingled in Turner's present manner as almost to necessitate their irregular drying; but that they are not necessary to the extent in which they sometimes take place is proved by the comparative safety of some even of the more brilliant works. Thus, "The Old Temeraire" is nearly safe in color, and quite firm; while "The Juliet and her Nurse" is now the ghost of what it was; "The Slave" shows no cracks, though it is chilled in some of the darker passages, while "The Walhalla" and several of the recent "Venices" cracked in the royal academy. It is true that the damage makes no further progress after the first year or two, and that even in its altered state the picture is always valuable and records its intention; but it is bitterly to be regretted that so great a painter should not leave a single work by which in succeeding ages he might be estimated. The fact of his using means so imperfect, together with that of his utter neglect of the pictures in his own gallery, are a phenomenon

in human mind which appears to me utterly inexplicable, and both are without excuse. If the effects he desires cannot be to their full extent produced, except by these treacherous means, one picture only should be painted each year as an exhibition of immediate power, and the rest should be carried out, whatever the expense of labor and time, in safe materials, even at the risk of some deterioration of immediate effect.—*Modern Painters.*

The death of our beloved gives us our first love again. By death we are taught truly to love: the dear one, no longer subject to our caprice or his own, remains a spotless, glorious object of love; and time, instead of taking away from his attractions, gives to him additional charms. Thus the heart is always a gainer, give it but free room and full liberty to love.

Moral science, no less than the other sciences, is subject to the limitations of our finite capacities; but as no one endeavors to reach the highest point, we are kept in ignorance of where its boundary lies.

Admiration profits not the object so much as the subject of it. While rejoicing that a man is great, we ought also to rejoice that we are able to appreciate his worth.

It is a matter of indifference to us what little minds think of our understandings, but not what they think of our dress.

We sympathize more readily with excess of sorrow, than with exuberance of joy. Sympathy increases with the former, not with the latter.

From Chambers' Journal.

## SERFDOM.

A READER of history is startled with no fact more curious, or more suggestive of melancholy reflections, than this: among every people aspiring to the rank of a nation has there been a tendency to a condition of slavery—slavery less or more modified, according to circumstances, but still, in any of its forms, a condition of personal degradation and dependence. Accustomed in the present day to associate ideas of injustice and violence with the condition of slavery, we are naturally disposed to imagine that slavery in all ages must have been maintained exclusively by force. Violence, no doubt, has been mainly a cause of slavery; but history demonstrates, by unchallengeable evidence, that, in numerous instances, it has also been a voluntary condition—a condition into which men have peacefully gravitated, and actually chosen in preference to liberty. In pretty nearly all modern dissertations on slavery, this latter fact has been somewhat disingenuously kept out of sight, possibly from a well-meant desire to do no damage to the cause of slave emancipation. We think it consistent with a truer morality to look the truth unflinchingly in the face; humanity, as we conceive, being always best served by a fair representation of facts, and the philosophy which can be drawn from them.

The oldest record on which reliance can be placed is the Bible—a work, it is to be presumed, in every one's hands. If we peruse with even moderate diligence the historical portion of that ancient record, we may observe, from various passages, that in the patriarchal and subsequent ages slavery was an institution regulated by express injunction. The Hebrews were to have no sort of scruple in buying or selling strangers. "Both thy bondmen and thy bondmaids, which thou shalt have, shall be of the heathen that are round about you; of them shall ye buy bondmen and bondmaids. Moreover, of the children of the strangers that do sojourn among you, of them shall ye buy, and of their families that are with you." (Lev. 25: 44, 45.) With respect to the buying and selling of each other, however, this ancient people were placed under some kind of limitations. If a Hebrew bought one of his own nation, the slave was to serve him only seven years, and receive certain presents at departure; but if it happened that the slave, from affection to his master, would not leave him, then he was to be kept in perpetual bondage. The ceremony on such occasions is distinctly prescribed: "Then thou shalt take an awl, and thrust it through his ear unto the door, and he shall be thy servant forever; and also unto thy maid-servant thou shalt do likewise." (Deut. 15: 17.)

The tenure by which personal freedom was held was exceedingly slight all over the East. Liberty might at any time be forfeited by impoverishment, or any other misfortune; and so little was it prized, that men did not scruple to gamble away their entire property in themselves and their families. In the infancy of institutions, buying and selling are the ready methods of negotiating a thousand intricate transactions. Contracts of various kinds resolve themselves into a matter of exchange. We accordingly find that, in all ancient marriages, the symbol of buying and selling was introduced. Every man obtained his wife for a certain quantity of goods or money, or, as in the case of Jacob, for a length of servitude. And till this day, in most rude nations, the same practice prevails. Among the North

American Indians, a wife is purchased by a present of peltry, and other articles suitable to the fancy or necessities of the seller.

In ancient times, inability to pay a debt was a fruitful source of slavery. In the narrative of events recorded in the fourth chapter of the second book of Kings, an affecting story occurs; it is that of a poor widow, whose children are about to be taken from her, and carried into slavery, in liquidation of an unpaid debt of their father. In the woman's despair she comes to Elisha, and after telling him that her husband is dead, adds that "the creditor is come to take unto him my two sons to be bondmen." The prophet, it will be remembered, interposes to prevent this calamity, by multiplying her vessel of oil, out of which she is desired to pay the demands of her ruthless creditor. From this simple fact, it would appear that people who could not pay their debts became, with their families, the property of their creditors. The seizure and sale of the person was, in all probability, the only available means of settling a claim of this kind; the law threw no mantle of protection over the liberty of the unfortunate debtor.

The readiness with which large masses of men became the property of wealthy owners, accounts, in a great degree, for the large public works of ancient times. What was wanting in capital and science was made up by the animal force of slaves. All the huge stones for building the pyramids were dragged on sledges, from distant quarries, by long rows of men, yoked together with cords, and impelled to exert their utmost strength by attendant companies of soldiers. The raising of these blocks to their respective places was likewise effected by bands of slaves pulling at ropes attached to rude mechanical contrivances. In the great pyramid of Cheops there are six million tons of stone, piled on a surface of eleven acres, and rising to a height of four hundred and sixty-one feet. A steam-engine could have elevated the whole mass without a single pang to a human being. But, according to Herodotus, relays of a hundred thousand slaves toiled for twenty years in raising the stones to their places. The sacrifice of life was enormous; but the gaps made by death were speedily filled up with new victims. The expense for labor was a trifle. The slaves, in all probability, cost nothing; there is even reason to believe that they resigned their liberty, and undertook these horrid services, for the sake of subsistence, although their fare was only a handful of dry beans.\* Some light is thrown on the methods for securing slave service in the history of Joseph.

It was while the Pharaohs were engaged in their stupendous undertakings that Joseph, a poor Syrian boy, bought by Potiphar from the Midianite merchants, rose to consideration as a domestic slave in the royal household. Having attained the position of prime minister, a dearth ensues in the land; and how does his sagacity meet this disaster? By a provident foresight he stores up an abundance of corn in granaries, and sells it out to the people during the scarcity. But the first year exhausts their stock of money, flocks, and herds; all that they have is given for food. At the second year of dearth,

\* A similar act of oppression was perpetrated by Peter the Great, of Russia, when he caused the erection of St. Petersburg. The work was compulsorily executed by serfs, who were wretchedly fed, and slept in the open air on the damp ground. The building of the city, it is calculated, cost the lives of upwards of three hundred thousand men. This event occurred in Europe within the last hundred and fifty years.

therefore, they come to Joseph, and in desperation offer themselves, with their land, in exchange for subsistence. "Wherefore shall we die before thine eyes, both we and our land? Buy us and our land for bread, and we and our land will be servants unto Pharaoh." Joseph, no doubt expecting this climax, buys the people, and removes them to cities appointed for their reception, to which movement no objection appears to have been made. "Then Joseph said unto the people—Behold, I have bought you this day, and your land, for Pharaoh; lo, here is seed for you, and ye shall sow the land." (Gen. 47: 23.) At a single blow, this clever foreigner had reduced the free population of the country to the condition of serfs of the crown—a condition as nearly as possible that of the agriculturists of Egypt in the present day under Mehemet Ali.

From similar glimpses of Grecian and Roman history, we learn that the abject poverty of the people made them thankful to resign their liberty, and become the bond-servants of opulent masters. In the latter days of the Roman empire the great bulk of the population in Rome were mere hangers-on upon great men. Without a will of their own, or any means of individual enterprise, they gladly submitted to be the property of some one who would feed them. So, also, through what are called the middle ages, which succeeded the dismemberment of the Roman empire, we find a condition of slavery universal. The church, it is true, successfully interposed to prevent the open sale and deportation of human beings on the rude scale which had been formerly practised; but this only modified, without extinguishing, the principle of slavery, and the condition of dependency which ensued did not essentially differ from that which had prevailed among the Romans. Like circumstances produced like results. There was no diffusion of capital, no scope for individual exertions, no safety but under the protection of a chief. For many centuries, therefore, in England and Scotland, the peasantry, according to law and usage, were the fixed vassals, villeins, or serfs of barons, who gave them food, shelter, and clothing, in exchange for their services in peace and war. Necessity had thus not a little to do with the slavery of the middle ages. To a poor man there was no choice between bondage and starvation, unless, indeed, he preferred the precarious life of an outlaw and robber. Nor did the bondage generally assume a harsh character. It was for the interest of a lord to take some degree of care of his vassals; and the expectation of living and dying in the same spot was considered a boon cheaply purchased by the resignation of independence. In sales of property, the vassals were disposed of, along with the lands and houses, to the new owner; thus, in deeds transferring property in the twelfth and thirteenth centuries, the words "*cum nativis, et eorum sequela*" (with the natives, and their succession) frequently occur; and it is no unusual stipulation, that the purchaser shall not dismiss the bondmen into a state of self-dependent freedom.\*

The gradual dissolution of feudal usages, and the advance of popular rights, along with a general improvement of means, put an end to villeinage in Britain, though it is historically interesting to know

that, within the last hundred years, men with their families were sold as pendlies of property in Scotland. We allude to the last fragment of legal serfdom in the British islands, as it existed in the relation to the operative salt-makers and coal-miners. In justice to these men, it should be mentioned that they manifested no reluctance to receive their freedom; but the same thing cannot be said of the clansmen in the Highlands and Isles on the abolition of the heritable jurisdiction, in 1748. They desired no civil privileges; they would have greatly preferred a perpetuity of feudal dependence on their chiefs; and old associations, along with their connection with the soil, were not dissevered without violence. The truth is, the poor people's minds were *etiolated*. They had not the vigor for self-reliance, and required some one to think and act for them.

After long ages, civil equality was established in England; every man was declared to be free, and to be the absolute proprietor of his own person. This freedom, however, was not an unmixed good. In proportion as villeinage disappeared, mendicancy increased; and so great did this new evil become, that the state was obliged to institute a modified species of serfdom, under the title of a poor-law. By this, as finally arranged in the reign of Elizabeth, the poor, no matter what their mental or physical condition, once more established their right to maintenance out of the lands on which they were born. It was practically a villeinage without sale. For the baron, was substituted a parish overseer; and for the word vassal, might be read pauper. The pauper could not be disposed of like a beast of burden; but he could be compulsorily worked in exchange for the food and shelter to which he was driven or voluntarily clung.

There the matter rests. At present, the expense incurred for the poor in England amounts to about six millions annually, (£5,039,703 in 1845); but this is independent of a vast number of charities; and were the dispensation of funds on a similar scale in Ireland and Scotland, the yearly cost of the poor in the United Kingdom would probably be not less than ten millions. The actual outlay in the present year, it is believed, will be twenty millions.

Out of all this recital of facts, a humiliating confession is wrung. Civilization has been as unsuccessful in preventing the growth of pauperism within the bosom of society, as ever barbarism was in avoiding the institution of slavery. Three thousand six hundred years ago, Joseph stayed the horrors of death by making the people serfs; England, to all appearance, can think of no other means of averting starvation, than by making the people parish paupers; that is, dependents on the land. While many millions of persons are dropping out of the ranks of independent laborers, and swelling the lists of the destitute, the talk is only of improved poor laws: which signifies an extended encroachment on public means.

From the facility with which masses of men relinquish habits of independence for the sake of mere creature support, it would appear as if there was a proneness to slavery in human nature which can be eradicated only by culture, and a concurrence of happy circumstances. The disappearance of feudalism, and the gift of personal freedom, along with the security of property, have unitedly raised Britain to a high pitch of glory. In no country in Europe is labor better remunerated, or skill and industry so sure of their reward. The progress of the humbler and middle classes has been correspondingly

\* Merville, who died in 1189, minister of William I. of Scotland, granted to Henry de Saint Clair the lands of Hermandston, in Mid-Lothian, with two bondmen, Edmond, the son of Bonde, and Gillemichael his brother, with their progeny, on this express condition, that they should not be removed from the lands.—*Diplom. Scotic.*, pl. 75.

great ; thirty millions of money in savings' banks, and some thousands of benefit and assurance societies, testify a prodigious advance in habits of foresight ; while the extensive enginery at work to instruct and refine, gives promise of a condition of things much more satisfactory than now exists. At the same time, it is painfully evident that society, with all its increasing opulence and intelligence, does not rid itself of the tendency to vassalage and pauperism. We cannot but consider this a curious phenomenon ; and did we despair, as some do, of civilization, we should, from appearances, acknowledge that history goes on in a circle, and brings a state of refinement round to the necessities and institutions of barbarism. The phenomenon, however, is incidental, not natural. Feudal usages have bequeathed to all classes the disposition to worship rank, by what may almost be called a blind instinct. This is strikingly manifested in the elections of members of parliament. On these occasions, not alone the peasantry, who may be held excused in their half-etiolated state, but the largest and most intelligent communities, are seen voluntarily committing the management of their affairs to parties not the most suitable on general grounds, but because they possess a title, or some other qualification equally aside from the duties which are to be performed. A similar species of subserviency pervades all the higher seats of learning ; of which no more conspicuous example could be given than the late exaltation of a prince—merely because he was a prince—to be chancellor of the university of Cambridge. Phrenologists, I suppose, would call all this a large development of veneration. If things are to be called by their proper names, it is a lingering principle of servilism—a spirit of grovelling and detestable meanness.

Where men, opulent and learned—perhaps we can hardly say educated, in the true sense of the word—are found cherishing feelings as grotesque as they are unreasonable, we have the less occasion to wonder at a disposition in the uninstructed masses to lapse back into habits of feudal dependence. Vast numbers are poor by inheritance, and having grown up a three-fourth idle existence, they naturally cling to the soil on which they have been cradled ; and as the poor-laws, with false benevolence, strengthen the traditional attachment, servilism amongst the rural population seems but the effect of a natural, though in reality an artificial, cause. While it is a leading principle in the poor-law to fix each man to his parish, a bounty may be said to be held out for the continuance of a qualified rural vassalage.

This, however, must have an end. We see it coming. The natural energies of society and powers of self-rectification have not hitherto had fair play ; they have been obliged to contend with all sorts of difficulties, the relics of a feudalism, dissipated only in name and a few of its forms. Nor is it in a frantic resumption of feudal obligations in all their mediæval integrity, as some would seem to argue, that the miseries of poverty are to be averted. Englishmen have not yet fallen so low as to wish to be slaves, in order to be insured their daily bread. Popular feelings, left to their free demonstration, would seem to point in a contrary direction ; and humanity might be more graciously employed than in encouraging fallacies which are repugnant to the spirit of independence. What we desire is justice, not charity. Freedom in commercial intercourse has already been accorded, though as yet its benefits can scarcely be said to be visible. An

abolition of the laws of entail, the unembarrassed sale and transference of land, (out of which would arise a better system of tenancies and cultivation,) the constituting of the whole United Kingdom one great parish as respects the poor, colonization on a large, a continuous, and systematic scale—are all so many additional means which the generation now growing up will have the fortitude to adopt for the relief of the country. Neither have we reason to despair of eradicating much of the tendency to pauperize in urban populations. It can doubtless be said, with too much truth, that there are large masses of men whom prosperity does not bless—that the fruits of labor only furnish means for dissipation. But to charge this entirely to the score of human nature would be manifestly unjust. In other countries, where refined taste and harmless mirthful recreation have not for ages been proscribed, we see no such consequences. A consciousness of this fact is dawning on Britain ; and in the ameliorations already affected, we have no unreasonable hope that foresight will increase along with general improvement in the tastes and habits of the people. What might not be achieved by education alone, were common sense, instead of the miserable prejudices of party, to be allowed the ascendancy !

The contingencies of human affairs will ever, unfortunately, create a certain amount of dependent poverty ; but that millions of beings, able-bodied, and not deficient in intellect, should accumulate in a hopeless species of servilism, burdensome to society, betrays a woful want of statesmanship, and is an impeachment of the national understanding. Without dreaming of a Utopia, we can conceive a state of things in which a far higher and more diffused civilization than the present will exist, and with which the spirit and practice of vassalage will scarcely find itself congenial. Nature has no deliberate design for the maintenance of slavery. But she unequivocally demonstrates what men may very easily become, morally and physically—by neglect and misusage, gravitating nearly to the character of brutes ; and by culture and favorable circumstances, ascending to a condition only a little lower than the angels ! History, religion, observation, everything enforces this everlasting truth. Man must elevate himself. His Creator has most graciously pointed out the means by which he may soar to heaven !

From Chambers' Journal.

JAMES CROWTHER, THE NATURALIST.

It is somewhat remarkable that there has long been at Manchester a set of men in humble life who devote their leisure time chiefly to the study of natural history. The newspapers lately gave an account of a member of this corps, which has struck our minds not merely as a curious and interesting piece of biography, but as something singularly affecting. James Crowther, though known in the scientific world for his having discovered many British plants in situations where they were not previously suspected, was never in any superior position in life to that of a warehouse porter. He died in January of the present year, at the age of seventy-eight, in obscure and necessitous circumstances—even, we regret to think, under a certain degree of privation ; that is to say, while not without the common necessities of life, he entirely wanted those comforts which his age and ailments demanded. Yet this seems to have been rather owing to his own modesty, in not making his wants known,

than to any indifference on the part of his neighbors, and those who knew his acquirements as a naturalist. Still, it is sad to think that this worthy old man had only a pension of three shillings a week to depend upon—the bounty of a Society for the Relief and Encouragement of Scientific Men in Humble Life—and that *one* of the seven sovereigns which were subscribed for his funeral and the erection of a little stone over his grave, would have been felt by him as a blessing at any time during the few weeks preceding his decease.

Crowther was a native of Manchester, and from nine years of age, when he became a draw-boy, he formed a unit among the toiling thousands of that seat of industry. He had previously attended various schools, and thus entered life as a man not wholly illiterate. From his earliest years, he delighted to examine every natural object which came in his way, and plants, above all things, attracted him. He soon came into connexion with the group of working-men who then associated in Manchester for the cultivation of botany. It was not uncommon for forty such persons to meet together weekly in the spring and summer seasons, in order to show to each other the rare plants they had collected, and discuss their characters. To pursue the account of Crowther, read some years ago before the society which latterly contributed to his support—“Often after he had finished his day’s work, he would set off and walk fifteen or twenty miles out of town, to collect a plant he had been informed of. He generally managed to reach the place of his destination at dawn of day, before any of the people were stirring, and thus escaped being taken up as a thief or a poacher, and was able to return to Manchester in time for his work. Notwithstanding all his precautions, however, he was often pursued, and had many narrow escapes from being captured. He often contrived to elude his pursuers by his extraordinary swiftness in running. Many were the hot chases he had had; but the most severe run was with Mr. Hopwood’s keepers, in Hopwood Park. They once pursued him three or four miles straight across the country without stopping, and he considered it nearly a miracle that he escaped them. John Dewhurst and Edward Hobson were his chief companions in these excursions, and amusing are the anecdotes he relates of their botanical rambles in Cottersill, Marple, Ashworth, and Birtle Cloughs, and in the neighborhood of Greenfield, in Saddleworth—all famous localities for lichens and mosses. Crowther has discovered many plants and insects new to this neighborhood. In company with John Dewhurst, he first found the *Limosella aquatica* at Mere, in Cheshire. When he saw it, he threw up his hat for joy; and on Dewhurst turning round to see what was the matter, Crowther cried out that he had found a new plant—a perfect gem. On their return home, they informed Hobson of the circumstance; but he would not believe them, he said, unless he saw with his own eyes the plant growing. The journey of Crowther and Hobson to see this plant is very pleasingly described by Mr. Moore, F. L. S., in his memoir of the late Edward Hobson, in the following words:—‘An amusing instance of Hobson’s perseverance in procuring scarce specimens is related in connection with his old companion Crowther. The latter having declared that he had seen an aquatic plant, which Hobson much wanted, growing in a mere near Knutsford, it was agreed that they should go there and procure it. Hobson had great doubts as to

their meeting with it; and when they came in sight of the lake, poor Crowther, whose accuracy was in question, had the mortification to find it so swollen with recent rains, that the plant was at least three feet under water. Hobson felt for Crowther’s disappointment, and set about botanizing in the adjoining fields, rather than complain of a fruitless journey. Whilst so engaged, he heard a plunge in the water, and looking round, Crowther had disappeared. In the greatest alarm, Hobson rushed back, and had the satisfaction to see the old man just emerging from the water, with the precious specimen in his grasp.’”

During manhood, and until age incapacitated him from work, Crowther was a warehouse porter. He married, and had several children, all of whom are still in humble life. His wages—at first sixteen shillings, afterwards a pound, a week—were always rendered by him in full to his wife’s guidance. To obtain a little more money for the gratification of his peculiar tastes, this honest fellow would go after six at night to wait the arrival of the Duke of Bridgewater’s packet by the canal, that he might have a chance of getting a gentleman’s luggage to carry. “Being a favorite with the captains of the packets, who respected him, he was generally employed if a passenger required a porter. When the late Sir James E. Smith was engaged on one of his botanical works, he was spending a few days with his friend, the late Mr. Roscoe, at Liverpool. Happening to mention to his host that he was delayed with his book from want of information relative to certain mosses and lichens, the former suggested that he should make inquiries of the weavers of Manchester, some of whom were good botanists. Sir J. E. Smith at first ridiculed the idea; but on being assured by his friend that he was likely to obtain the information he required, he proceeded to Manchester by the Duke of Bridgewater’s packet. On arriving at Knott Mill, he inquired for a porter to carry his carpet-bag up to the inn, and old Crowther was engaged. After proceeding a short distance, he asked if Crowther knew some person who lived at Hullard Hall? ‘Oh yes, sir, I do, very well; he is a bit in my way.’ ‘Why, what way is that?’ asked Sir J. E. Smith. ‘He is fond of collecting mosses and lichens,’ was the reply. A conversation ensued, and Crowther went up to the Star Inn, and, as Sir J. E. Smith declares, furnished him with all the information he was in search of.” Crowther, in like manner, assisted Dr. Hull in his work on “British Botany.” A gentleman named Carmelletti had in a similar way been obliged to him. Crowther always spoke of the last-mentioned person with peculiar pleasure, for he had given the poor porter four shillings and a pair of new shoes for bringing him one rare plant which he found growing near Middlewich. Crowther was also fond of entomology, and had collected many insects as well as plants, all of which were sold from time to time when old age and poverty fell upon him.

When Crowther was a young man, there was a college in Manchester, which was afterwards removed to York. One of the Roscoes of Liverpool, studying at this seminary, was an ardent botanist, and frequently employed Crowther to collect specimens for him. Sometimes they took botanical excursions together. To follow the obituary memoir of our hero in the *Manchester Guardian*—“He was in his youth fond of a practical joke. On one excursion, noticing that Mr. Roscoe was genteelly attired in the costume of that day—in shorts and white silk

stockings—Crowther made his way into a soft, boggy, dirty place, somewhere in Crumpsall, the character of which was somewhat disguised by a green covering of grass and herbage; and when in the midst of this, he called eagerly to Mr. Roscoe, as if he had found some rare plant. Mr. Roscoe hastened towards him, and soon plunged up to his knees, his white silk stockings receiving a complete coating or varnish of boggy mud. Mr. Roscoe bore his ludicrous mishap with great good-humor; and after getting cleansed, and a little refreshment at a house not far off, they returned home. Shortly afterwards, Crowther, visiting Mr. Roscoe at his lodgings, was induced to take hold of the chain of an electrical machine, (and these machines were then not so well known as at present,) when Mr. Roscoe gave him as severe a shock as he dared; and Crowther said he was quite stunned by it, and did not feel right again for some time afterwards. 'There,' said Roscoe, 'you bogged me; now I've electrified you; and we are all straight again.'

The writer in the "Guardian" adds a few anecdotes of the perils which then beset such poor votaries of science in their ramblings after plants. "On one occasion Crowther and Richard Buxton went out together to Staly Moor, and to a valley called Staly Brushes, in search of a particular plant, taking with them as a guide a person who lived at Ashton. By him they were led rather higher up the hill-side of the moor than they ought to have gone, and consequently they got amongst the grouse. They had not been there long hunting, not the grouse, but their own botanical game, when a gamekeeper came up, told them they were trespassing, and accused them of poaching. They for some time could not satisfy him that they were only botanists, that they were in search of a particularly rare plant, the 'cloudberry'—so called from its growing on high hills, which are often cloud-capped—(the *Rubus chamaenorus*.) The gamekeeper for some time would not believe them, and was very abusive, saying he knew they were after game. They showed him their plant-boxes; but he said these were shuffling excuses, and he threatened to take them before the magistrates for poaching. At last, however, finding they had no guns, or snares, and by degrees becoming satisfied of their having no hostile views on the grouse, he permitted them to go, and directed them the way to the bottom of the valley, which they took with great alacrity, and with no small thankfulness at their escape from so awkward a predicament.

"Upon another occasion, Crowther was actually brought before a magistrate on suspicion of poaching. He was botanizing on the estate of Mr. Egerton of Tatton, and when in search of aquatic plants, he frequently carried a rod, not unlike a fishing-rod in general appearance, having joints, with brass ferrules; but at the end of this long rod were two hooks, one sharpened at the inner edge, in the form of a sickle, with which he cut off plants growing far in the water, and with the other hook, which was not sharpened, he angled the plants to the bank. Once while thus engaged in a mere, or piece of water, on the estate of Mr. Egerton, two gamekeepers came up and seized him; and notwithstanding all his protestations to the contrary, and his assurances that he was not fishing for fish, but for plants, took him before Mr. Egerton on a charge of poaching. Mr. Egerton interrogated him, and Crowther told him what his pursuit really was, and exhibited his tackle and hooks, which it was at once seen were not very well adapted for angling

for carp, perch, or trout; and the result was, that Mr. Egerton directed that he should be immediately liberated, saying to the keepers, 'Let him go wherever he has a mind in future, and do not molest him any more.'

"Another of Crowther's perils was from a savage bull. It was his habit, in the Whitsuntide week, when the annual races gave a general holiday to the work-people of the town and neighborhood, to make a pedestrian botanical excursion to Craven, Yorkshire; and he visited that neighborhood several years at that period. On one occasion, while botanizing there, he found a bull coming directly towards him, with most unequivocal symptoms of intending mischief. The hilly fields in that neighborhood are all divided by stone fences, some of these being walls of a considerable height. He succeeded in reaching and climbing one of these high walls before the bull reached the spot. There stood the savage animal just below him, bellowing, lashing his tail, and exhibiting every mark of fury. Crowther, as he sat on the coping of the wall, just out of reach of the bull, thought, if he could detach a large stone from it, he might give the animal a temporary *quietus*. He succeeded in loosening a large and heavy stone, and poising it with both hands, he launched it with all his force at the bull's head, and with such effect, that the animal dropped on the ground as if killed. Crowther stayed not to see the issue of his adventure, but ran off on the other side of the wall. When telling this adventure, he invariably expressed his belief that he had really killed the bull."

Our humble botanist seems to have been at all times a sober and well-behaved man. In the various notices respecting him, we hear of no blame whatever attending his modest but persevering love of natural history. He seems to have borne the penury of his latter years with the most perfect resignation, as beffited the pure and unsophisticated lover of nature. His last wish was, that he might be laid in St. George's burial-ground at Hulme, next the remains of his old friend Hobson, with whom, when alive, he had passed his happiest hours. It was a "last wish" worthy of the simple and amiable character of the man, and of course it was fulfilled.

Amongst the various means of superseding mean with worthy and innocent indulgences, we are surprised that natural history has met with so little attention. As a source of gratification and amusement, taking it in its lowest aspect, we know nothing so exempt from all corrupting tendency. It seems to have the irresistible effect of abstracting the mind from all that is gross and sordid. The first simplicity is sustained by nothing so well as by natural history. Perhaps we should not be saying too much if we said that the elements of a beautiful religion lay in this study, when its study is set about in a right manner. Why, then, are not our youth more generally initiated in natural history as a branch of education? In no rank would it fail to work to good ends. The poorest class of workmen would possess "riches fineless," in a taste like that of Crowther and Hobson. The common soldier, if acquainted in even a small measure with botany or entomology, would have at command a means of enjoyment which would make the dreariest of home or foreign stations to him a paradise. And the researches of such persons, both at home and abroad, would, we cannot doubt, help much to advance science itself. Nor should we overlook the important effects of such studies in bringing

men of different classes together on a footing of equality, which must tend to make the social machine the firmer in its joinings. On the other hand, what a redemption is furnished by natural history for the young man of fortune! Those energies, those precious possessions, which are too often squandered on the turf, or dissipated in tiresome idleness, how might they be converted to noble uses, if our youth of the higher classes were inspired with a love of natural history! On this subject we shall relate an illustrative anecdote, which may form an appropriate conclusion to the present paper. An ingenious naturalist was lecturing a few years ago at a watering-place, on certain curious preparations of the lower marine animals, which he had spent years in elaborating. Amongst the audience was a peer, who had spent a brilliant fortune in the follies which beset his class, and was now in much reduced circumstances, but who had naturally some good dispositions. This gentleman listened to the lecture with the keenest interest, and after its conclusion, lingered behind to examine the specimens, and converse with the lecturer. "Oh, God!" he at last exclaimed, "had I but been taught a little of this science in my early days, from what it might have saved me!"

From Chambers' Journal.

#### NATURE AT WAR.

##### THE BALANCE.

In some former papers\* we have given an account of the wars, offensive and defensive, of the lower animals; and we now desire to reconcile such apparent anomalies with the general scheme of nature.

It is manifest that there exists a limit to the over-multiplication of life on the one hand, and to its annihilation on the other. The earth can be proved to be capable of supporting no more than a definite number of living creatures upon its surface. If there is an excess, it will be cut down; if there is a deficiency, it will be supplied. In a word, there is a balance which holds the opposing powers in equipoise; a balance, one of whose scales is labelled "multiplication," the other "subtraction." Held by an Omnipotent hand, guided by an Omnipotent Power, it may have its oscillations, but, as a universal scheme, its equilibrium is almost perfect; and at no period since the earth and its tenants sprang into existence, do the annals of natural history inform us that either scale has kicked the beam. If creatures drop out of the one scale, a compensating proportion of others will be added on to the opposite. Thus, while it is always under the direct control of the Author of life, it possesses all the elements of a self-regulating principle within itself. To take a simple illustration in the initiative. A certain insect has had a certain plant appointed to it as its food; a season having some peculiar features will produce this plant in unusual luxuriance, to the exclusion, probably, of many that formerly shared the same area of soil with it. As a direct consequence of the increase of food, the number of insects is a thousandfold increased, the luxuriant plant is devoured by myriads of additional mouths, and is at last cropped down to what may be regarded as its normal status. The balance now rapidly inclines in the opposite direction, as concerns the equilibrium of vegetation, but it is again restored by the birth and increase of all the plants eaten out and smothered before. This is just an instance in which a redundancy of production brings its own

check upon its back. In this case, and in many others, the balancing principle reacts also upon the very check itself; with the disappearance of the excess of sustenance the excess of consumption vanishes too, and the millions of busy insects die by a simple negation.

To extend our views. The balance of power reveals itself in both the great kingdoms of nature—animal and vegetable. Confining our attention principally to the former, and in some measure respecting a convenient division formerly made into carnivorous and herbivorous creatures, let us briefly advert in the first place to the balances of production and consumption subsisting in the mutual relations of animals—predators and their prey. In sustaining the equilibrium of species, insects are very actively and very extensively engaged. There is a species of aphis which does incalculable mischief to plants, destroys the hops of the orchard, and blights every tree upon which it alights, which finds a check in a splendidly glittering enemy known as the "lion of the aphis." This aphis lion was commemorated on a former occasion for its remarkable freak of imitating the destroyer of the Nemean monster, and clothing itself with the skins of its slain. Its ravages among these insects are only to be compared with the ravages of the latter upon plants, and are probably under-estimated in the comparison. The aphis have, fortunately for us, other enemies still. Kirby thus writes of the destruction caused by the caterpillar of another aphidivorous insect. "It was but last week that I observed the top of every young shoot of the currant-trees in my garden curled up by myriads of aphis. On examining them this day, not an individual remains; but beneath each leaf are three or four full-fed larvae of aphidivorous flies, surrounded with large heaps of the slain, the trophies of their successful warfare, and the young shoots, whose progress has been entirely checked by the abstraction of sap, are again expanding vigorously." Rolander made a remarkable discovery, which is a beautiful illustration of several links in our chain of argument. "The *Phalena strobilella* has the fir cone assigned to it to deposit its eggs upon; the young caterpillars, coming out of the shell, consume the cone and superfluous seed; but, lest the destruction should become too general, the ichneumon lays its eggs upon the caterpillar, which, being hatched, destroy the latter." It has a remarkable apparatus with which it succeeds in this insidious attack; its body cannot enter into the cone, but it inserts its long, delicate tail into an opening in the cone, until it succeeds in touching the enclosed caterpillar. The egg is then slidden down through this tail, and poised upon the hapless larva, whose death then becomes inevitable. In the tail is placed a kind of borer, which, says Reaumur, they use as a carpenter uses his hand-awl, giving it a semi-rotatory motion in alternate directions. By this means the ichneumon is able to bore down to the nests of the mason-wasps; when it has bored quite down to the larva, enclosed in such fancied security, it lays the fatal spot upon it, and takes its leave, satisfied of the ultimate result. The ichneumon will also pierce the gallants which protect the slumbering parasite within, oviposit upon it, and depart. The service this little destroyer renders to man is incalculable; it pierces the covering with which the *Cecidomyia* or Hessian fly invests its progeny—an insect whose attacks upon wheat are the dread of every agriculturist—and thus nips this destroying creature in the bud. It also destroys in a similar way the cater-

\*Living Age, Nos. 150 & 154.

pillars, which consume the cabbages, and the genus *brassica* generally; both of them services which it is only just to acknowledge as among the most valuable rendered to man by the instrumentality of the world of insects. The processionary caterpillars have a tremendous enemy in an insect named the *caloroma*, which, like the glutton, distends itself to such an extent with its prey, as to be incapable of motion. It is a singular illustration of the law of balances, that while these very insects are imbued in bloodshed themselves, they are followed by flocks of birds which swallow up multitudes of the emigrating army in turn. Finally, the very striking fact may be mentioned, that Kirby, in a calculation of about eight thousand species of British insects, found that the two divisions, carnivorous and herbivorous insects, formed almost a counterpoise to each other, the former being a little in excess.

To turn to the kingdom of fishes. It has been calculated that one codfish produces about six millions of progeny in one spawning season. If from this vast number five millions five hundred thousand are deducted for losses by accident, or mischance, or prey, and only five hundred thousand remain as the offspring of one parent—were this small portion of the original sum alone to come to maturity every year, the sea would soon be swarming, other circumstances being favorable, with no other inhabitants. Not so: the check to this excessive productiveness is that of prey; and so efficient is its operation, that out of the original six millions, a few score, or even less, alone come ultimately to maturity. The herring is also possessed of astonishing fecundity, coming, as they do, to our shores and shoal waters in numbers which are feebly expressed by the term "millions"—in shoals miles in length and breadth. What would ensue were there no means of keeping down this enormous production of living beings? By their consumption of the entire food of the ocean, all other fish, if they still remained inoffensive, would perish from starvation. Such a contingency is provided against by depredation. The sea-fowl in countless flocks feast upon them, and consume incredible numbers; the shark gulps down his thousands too; and the dogfish, porpoise, grampus, in large herds, hem in the herring shoal, and at every instant are engaged in reducing its hosts; while man and starvation complete the havoc, and curtail the tendency to excess. To convey an estimate of the mighty numbers of these shoals, it has been said that if all the men in the world were to be loaded from some of them, they would not carry the thousandth part away! And if such is the productiveness of creatures inhabiting our northern seas, so strong the tendency to over-multiplication in the teeth of every obstacle, what estimate is to be formed of the fecundity of those more genial regions where all nature revels in luxuriance? The inexhaustible millions of fish which crowd the warm waters of the Indian Ocean are so vast, that fishing in those seas is next to a sinecure. But it is here that these voracious monsters, which are equally the terror of men and of the finny race, multiply to a corresponding degree, and keep down the exuberance.

Again, among birds. Rennie, quoting Reaumur, states that a single caterpillar of the *Gamma* ( $\gamma$ ) moth lays four hundred eggs. If twenty of these were placed in a garden, and became moths, the eggs laid by these, if all fertile, would produce in the next generation eight hundred thousand caterpillars. Rennie adds, that did not Providence, therefore, put causes in operation to keep them in

due bounds, the caterpillars of this moth alone, leaving out of consideration the two thousand other British species, would soon destroy more than half our vegetation. They are devoured in multitudes by birds. Bradley calculated that a pair of the common sparrows, with a young family at home, will destroy three thousand three hundred and sixty caterpillars in one week! Swallows, in their airy flights, destroy hosts innumerable of ephemeral and other insects. The shrike, kestrel, pie, rook, crow, woodpecker, and a vast number more, derive their entire subsistence from the consumption of insects and *annelide*, and the amount of service thus rendered to man has received more than one ample corroboration. The hawk tribe, on the contrary, keeps down the production of field-mice, young rabbits, many of the smaller kinds of birds, and reptiles; and it is worthy of remark, that whenever, from unforeseen causes, any particular species comes to be in excess, these birds confine themselves to the work of keeping it down, from the simple reason that this is the most ready method of furnishing themselves with food. If the excess is at all permanent, it is productive of a greater increase in the numbers of the consumer, until a balance is at length attained. The influence of the more rapacious birds of prey in the same work, although advantageous, and, taken as a whole, of considerable momentum, yet fails to exhibit itself so strikingly in the individual as in the instances enumerated. A similar general remark is applicable to the operation of reptiles.

Lastly, to speak of mammals. The fertility of the rodent animals is so great, that were they at liberty to multiply unchecked, the period would not be far distant at which they would cover the earth with their progeny. Thus rabbits, which are said to have been originally natives of Spain, multiplied at one period in that country, and also in some of the islands of the Mediterranean, to such a prodigious extent, as to make it necessary to call in the assistance of the military to destroy them; but this failing to exercise any appreciable influence over the invaders, the ferret and weasel were introduced, and the numbers of the rabbits became very rapidly thinned down. Every one is familiar with the extraordinary fertility of our domestic nuisances, rats and mice: at an earlier period in the earth's history, they seem to have swarmed in still greater numbers. Dr. Lund in his essay on the Fauna of Brazil, states, that in a cavern which he entered in Brazil, and which is 120 feet long, from 6 to 9 feet wide, and from 30 to 40 feet high, about twenty feet from the entrance he met with a layer of brownish earth, very loose, and about a foot in thickness. On examination, this mould proved to be full of small bones. He filled a box, containing about half a cubic foot, with it, and counted in this quantity about two thousand separate *rami* of the underjaw of a species of rat, besides the jaws of other animals. All the skulls were fractured: this was evidence of a violent death; and in the cave were found numbers of owls, which Dr. Lund believes to have been, during successive ages, the murderers of the countless myriads of the rodent animals whose remains formed the floor of the cavern. Aristotle tells us that he put one mouse with young into a vessel of corn; in some time after he found a hundred and twenty descendants from this single mouse! In fact, were it not for furious civil wars, for the incessant hunting down of these creatures by cats, owls, snakes, and others, the rat tribe would almost dispute with man himself the

dominion over the entire globe. The lemming or Lapland marmot, in armies made up of hundreds of thousands, at certain periods, generally once or twice in twenty-five years, sets out on its journey, and the host is followed by wolves, bears, and foxes, to whom the lemmings fall an incessant prey. Great troops of the *quaggas* or wild asses are occasionally known to migrate in search of food, and are cut down night after night by lions and others of the carnivora. The springbok or Cape antelope is also often driven down by drought from the deserts to the cultivated districts, where the havoc they commit is beyond estimation; and where they would soon be the means of depopulating whole regions, were it not that troops of ravenous animals follow, and constantly fall upon them. Mr. Lyell quotes, upon the authority of Ullva and Buffon, an anecdote which appropriately illustrates the general system of counterchecks. The Spaniards had introduced goats into the island of Juan Fernandez, where they became so prolific, as to furnish the pirates who infested those seas with provisions. In order to cut off this resource, dogs were introduced; the goats were rapidly destroyed, and after this event the number of dogs as rapidly diminished.

Let us now turn, but briefly, to depredations which are committed more directly upon the vegetable world; by means of which it not unfrequently happens that the whole vegetation of a district may entirely alter its character. The aphides, and the formidable locusts, come to take the foremost rank in this engagement. The aphides sometimes visit a region in such numbers that their armies darken the air, and, alighting upon plants, they rob them of their sap, and not unfrequently strip them of their leaves, in either case effecting their destruction until another spring. The fearful ravages committed by locusts are so well known as not to require illustration. Their arrival destroys one balance, but institutes another in its room; the herbivorous animals speedily perish for lack of food, but the amount of animal matter and of life in the locusts more than compensates for this loss. This, however, is a defective balance. When not so universally destructive, locusts often restore the equilibrium in the vegetable kingdom; they attack a particular plant which may have been over-luxuriant, and consume it down to the ground, thus affording room and opportunities to other species to push forward. The Syrians and Hottentots turn the tables upon these creatures, and since they devour their produce, they become devoured themselves in its stead. Many caterpillars eat daily twice their weight of leaves; so that the harm a number of such creatures would do in a garden may be readily conceived. Just as with the locusts, so when the caterpillars, ants, and aphides multiply to excess, and thus rob the birds of their food, the latter find a very agreeable substitute in the persons of the devourers themselves.

There are a few special cases which have interest enough to entitle them to a short consideration. There are two modifications of the means of balancing in particular, which show, that to effect this great object, extremes can meet. The smaller predatory animals, after their wholesale destruction of life among creatures weaker than themselves, die at last the death of murderers, in becoming victims to the great generals in the art of slaughter—the larger carnivora. Again, the largest and fiercest creatures, in spite of their colossal powers, fall victims to the attack of the most insignificant beings. Illustrations of both of these propositions abound

everywhere. In the first case, it is the savage law of superior strength and ferocity; in the second, it is the system of parasites, which is at once the instrument of retribution, and a co-operative means of preserving the equilibrium of species. Cuvier relates that the sword-fish, in spite of its terrific weapon, is overcome by the attacks of a little crustaceous animal which penetrates into its flesh, and renders it sometimes so furious, that it dashes itself on shore. De Geer says that even the sanguinary spider has a formidable enemy in a little parasite which attaches itself to its belly, and eventually succeeds in destroying the tiger of the insect tribe.

The balance is, however, held in equipoise by the assistance of other causes partaking of a more extrinsic character. The locusts, writes Barrow in his travels in Africa, are sometimes driven into the sea by a violent wind; on one occasion their dead bodies formed on the shores of Africa a bank three or four feet high, and fifty miles long. The sugar-cane ant, *Formica saccharivora*, at one time appeared in Grenada in such infinite numbers as to threaten the complete annihilation of the plant. Large rewards, to the amount of twenty thousand pounds, were in vain offered for some effectual remedy; and the universal ruin they caused was awful. In vain were fires lighted, or canals of water dug, to stop their progress, a forlorn-hope of millions would stifle the flame, or fill up the dikes, and over their dead bodies their comrades passed in triumph. Serious thoughts were at length entertained of quitting the island altogether, and abandoning it to its fate, until, in 1780, a fearful tornado, accompanied with torrents of rain, entirely annihilated the marauders. The occurrence of floods over extensive tracts of country is another natural agent in restoring an overbalance to equilibrium. Humboldt in his personal narrative says, that during the periodical swellings of the vast rivers in South America, immense numbers of animals are drowned: the wild horses, which graze in innumerable hosts in the savannas, are annually drowned in thousands by the sudden rising of the rivers which flow through them; the rising of the inundation being so rapid, that these creatures have not time to save themselves by retreating to the higher ground. Thus, if year by year these brute armies have their ranks increased by countless additions, inanimate nature itself arrays its powers against them, and seems to refuse to permit the excessive increase. The emigrating instinct may be cited as another provision for the same purpose. Large numbers of herrings are in their migrations frequently cast upon the shore, and stranded. Insects, such as the recent flights of butterflies, will, when they have multiplied to excess in one country, restore the balance there by taking their departure. Ants set out in great armies to found a new colony, and fall victims by the way to their many enemies. In Lapland, the squirrels, when pressed for food, will collect in large numbers, and set out on an emigrating expedition.

A beautiful thought suggested by Liebig opens up to our contemplation a view of balances in the vegetable kingdom, which I feel reluctant to leave unconsidered. From the vast amount of carboniferous remains discoverable in various regions, it has been conjectured that the primeval atmosphere was excessively charged with carbonic acid gas. A vast luxuriance of vegetation was the consequence, until by its means the surcharge of that gas was reduced; and then, by slow degrees, the excessive vegetation also became diminished, and the

period arrived in which the quantity of the carbonic acid gas in the air neither increased nor diminished; in short, a balance was the result. If it increased, an increased vegetation would ensue, and bring the countercheck for the preponderance; if it diminished, there would be a scantier vegetation, until the amount resumed its standard again. In such a simple and wonderful manner are the atmosphere and the vegetable world counterbalanced. The geologist, also, in reflecting upon the gigantic herbivorous animals which were in existence at a former epoch—the mastodon and megatherium—will not fail to connect with the former means of balancing the direct check which could result from the enormous appetites of creatures possessed of the most colossal proportions; creatures whom a forest would alone satisfy, and whose depredations no vegetation could have endured with impunity but the over-teeming one of a young world.

As some allusion has been made formerly to a kind of mutual influence discoverable in the relations of the different members of the vegetable kingdom, we will conclude by citing a few instances of the balancing of species in it. Decandolle writes—“All the plants of a given country are at war with one another. The first which establish themselves by chance in a particular spot tend, by the mere occupancy of space, to exclude other species; the greater choke the smaller; the longest livers replace those which last for a shorter period; the more prolific gradually make themselves masters of the ground which species multiplying more slowly would otherwise fill.” The naturalist thus comes to regard the weed in his garden as much the enemy of his delicate favorites as the lion is to the sheepfold; the only difference is, that it kills by suffocation, not by bloodshed. Thus the grasses and the hardy nettle will thrive in such rank luxuriance as to stifle the other species of plants; the restitution of the balance then devolves upon an insect or a quadruped which is attached to that kind of food, and then the others, to which they are indifferent, come to make headway again. Plants of one species also, when they multiply to excess, in a short time render the soil incapable of supporting them, and they perish, to give way to new species; and these, after a time, to others. In fact, rotation is a modification of the balancing principle.

Such is the simplest view of the subject: on the one hand a multiplying, on the other a subtracting power; both opposed to one another, and by their mutual opposition preserving the harmony of the creation scheme. Production and destruction, then, are the poles between which a kind of neutrality is observed in the operations of nature. But these poles are widely separated the one from the other, and thus a great range or play of forces may be allowed in the working of this scheme, without in anywise involving the integrity of the great plan. The general balance which exists is a system, rather than a balance, of two constant equipoises against each other. Thus one entire species may be annihilated, and the check it exercised upon another race is then lost. This loss is commonly provided for; either another species takes its place in the work of depredation, or the species upon which it fed is first dismissed, the necessity of a check is cancelled, and, as a simple result, the check itself passes away from the stage altogether. Here is an individual balance destroyed, but the law of balances is not thereby in the least affected. A simile may help to make this statement more readily seized upon. There are some species of foreign ants

which are great wood eaters: these insects will frequently attack the posts which support a building; they consume the wood upon the solidity of which the superstructure is dependent; but for every particle of wood removed, they substitute a mortar of their own, which possesses equal or perhaps greater strength, and so in a little time the building which formerly rested upon wood is now, though still as secure as ever, resting upon a totally different support. Just so with the system of balancing. Its elements have been wonderfully different in past ages to those which obtain at present; the grand design has continued the same, although the basis upon which it reposes has been so entirely and so repeatedly metamorphosed.

FEET OF THE CHINESE WOMEN.—That a whole race should take so much trouble, inflicting and undergoing so much pain, to deface and damage the body, is strange. It is the most universal and curious kind of mutilation practised in any country, and shows how dangerous it is to permit fashion, leagued with false notions of beauty, to tamper with the wholesome operations of nature. There is little doubt that the practice began at first in a small way and with slight results, in a desire of doing what they might, by artificial contrivances, to help in the formation of a small, well-arched, female foot, and that it crept on with increasing force, though by scarcely perceptible movements, till it reached its present universal extent, and power of at once destroying all the beauty of the foot, and all but annihilating its functions. While the foot is stunted and crippled, the leg wastes, loses its symmetrical roundness and waving outline, and, though other parts of the body are still in a state of vigorous growth, shrinks and withers like a palsied limb. It need scarcely be added that such a condition of the lower extremities must interfere materially with the power of locomotion. Walking is difficult and painful, the gait being uncertain and waddling; the maimed object totters, is in continual danger of falling, and, beyond short distances in girlhood, gladly avails herself of the help of a stick. Yet all this is done and suffered, sacrificing at once beauty and usefulness, in the absurd ambition of completing nature's operations, and surpassing the scheme of creative wisdom.—*Wilson's Medical Notes on China.*

*Instructions for making Unfermented Bread, with Observations on its Properties, Medicinal and Economic.*  
By a Physician. 3d Edition.

It is well known that in the ordinary process of making bread fermentation takes place; and the carbonic acid formed is the means of making the bread light. But during this process there is as much starch of the bread destroyed as is equivalent to the formation of the carbonic acid gas. In order to prevent this destruction, it has been proposed to make bread with carbonate of soda and hydrochloric acid, mixed in such quantities as to form carbonic acid sufficient to lighten the bread, and hydrochlorate of soda to serve as salt. This process has been found to answer:—and the little pamphlet under notice has been written to give an account of it. The author calculates that in the United Kingdom an amount of loss occurs annually from the old way of making bread, and eating white bread instead of brown, equal to 4,500,000 quarters of wheat—amounting in money value, at 50s. a quarter, to 11,250,000/-; or twice as much wheat as is supplied by importation. Such a statement demands inquiry; and if found to be true, every possible means should be taken to introduce the new practice. With regard to the medicinal virtues of unfermented bread, we do not think our author has proved his point. It must be at least as good as other bread.—*Athenaeum.*

From Blackwood's Magazine.

LETTERS ON THE TRUTHS CONTAINED IN POPULAR SUPERSTITIONS.

II.—VAMPYRISM.

DEAR ARCHY.—In acknowledging my former letter, you express an eager desire to learn, as you phrase it, "all about vampyrs, if there ever were such things." I will not delay satisfying your curiosity, wondering only how my friend, your late tutor, Mr. H., should have left you in a state of uncertainty upon a point on which, in my time, schoolboys many years your juniors had fully made up their minds.

"Were there ever such things as vampyrs?" *tantanne rem tam negligenter?* I turn to the learned pages of Horst for a luminous and precise definition of the destructive and mysterious beings, whose existence you have ventured to consider problematical.

"A vampyr is a dead body, which continues to live in the grave, which it leaves, however, by night for the purpose of sucking the blood of the living, whereby it is nourished, and preserved in good condition, instead of becoming decomposed like other dead bodies."

Upon my word you really deserve—since Mr. George Combe has clearly shown in his admirable work "on the Constitution of Man, and its adaptation to the world around him," that ignorance is a statutable crime before Nature, and punishable, and punished by the laws of Providence—you deserve, I say, unless you contrive to make Mr. H. your substitute, which I think would be just, yourself to be the subject of the nocturnal visit of a vampyr. Your scepticism will abate pretty considerably, when you see him stealthily entering your room, yet are powerless under the fascination of his fixed and leaden eye—when you are conscious, as you lie motionless with terror, of his nearer and nearer approach—when you feel his face, fresh with the smell of the grave, bent over your throat, while his keen teeth make a fine incision in your jugular, preparatively to his commencing his plain, but nutritive repast.

You would look a little paler the next morning, but that would be all for the moment; for Fischer informs us, that the bite of a vampyr leaves in general no mark upon the person. But he fearfully adds, "it (the bite) is nevertheless speedily fatal, unless the bitten person protect himself by eating some of the earth from the grave of the vampyr, and smearing himself with his blood." Unfortunately, indeed, these measures are only of temporary use. Fischer adds, "if through these precautions the life of the victim be prolonged for a period, sooner or later he ends with becoming a vampyr himself; that is to say, he dies, and is buried, but continues to lead a vampyr life in the grave, nourishing himself by infecting others, and promiscuously propagating vampyrysm."

Now this is no romancer's dream. It is a succinct account of a superstition, which to this day survives in the east of Europe, where little more than a century ago it was frightfully prevalent. At that epoch, vampyrysm spread like an epidemic pestilence through Servia and Wallachia, causing innumerable deaths, and disturbing all the land with apprehension of the mysterious visitation, against which no one felt his life secure.

This is something like a good, solid, practical popular delusion. Do I believe it?—to be sure I do;

the facts are matter of history. The people died like sheep, and the cause and method of their dying was, in their belief, what has just been stated. You suppose, then, they died, frightened out of their lives; as men have died, whose pardon has been proclaimed when their necks were already on the block, of the belief they were going to die! Well, if that were all, the subject would be worth examining; but there is more in it than that, as the following o'er true tale will convince you, the essential parts of which are attested by perfect documentary evidence.

It was in the spring of 1727, that there returned from the Levant to the village of Meduegna, near Belgrade, one Arnod Paole, who, in a few years of military service and varied adventure, had amassed enough to purchase him a cottage, and an acre or two of land in his native place, where he gave out he meant to pass the remainder of his days. He kept his word. Arnod had yet scarcely reached the prime of manhood; and though he must have encountered the rough, as well as the smooth of life, and have mingled with many a wild and reckless companion, yet his natural good disposition, and honest principle, had preserved him unscathed amid the scenes he had passed through. At all events, such were the thoughts expressed by his neighbors, as they discussed his return and settlement among them in the stub of the village Hof. Nor did the frank and open countenance of Arnod, his obliging habits, and steady conduct, argue their judgment incorrect. Nevertheless, there was something occasionally noticeable in his ways, a look and tone that betrayed inward inquietude. Often would he refuse to join his friends, or on some sudden plea abruptly quit their society. And he still more unaccountably, and as it seemed systematically, avoided meeting his pretty neighbor, Nina, whose father occupied the next tenement to his own. At the age of seventeen, Nina was as charming a picture as you could have seen, of youth, cheerfulness, innocence, and confidence in all the world. You could not look into her lupid eyes, which steadily returned your gaze, without seeing to the bottom of the pure and transparent spring of her thoughts. Then why did Arnod shrink from meeting her? He was young, had a little property, had health and industry, and he had told his friends he had formed no ties in other lands. Why, then, did he avoid the fascination of the pretty Nina, who seemed a being made to chase from any brow the clouds of gathering care? But he did so. Yet less and less resolutely; for he felt the charm of her presence; who could have done otherwise? and how could he at last resist—he did n't—the impulse of his fondness for the innocent girl who often sought to cheer his fits of depression?

And they were to be united; were betrothed; yet still an anxious gloom would fitfully overcast his countenance even in the sunshine of those hours.

"What is it, dear Arnod, that makes you sad? It cannot be on my account, I know; for you were sad before you ever noticed me; and that I think," and you should have seen the deepening rose upon her cheek, as she added, "surely first made me notice you."

"Nina," he answered, "I have done, I fear, a great wrong in trying to gain your affections. Nina, I have a fixed impression that I shall not live; yet, knowing this, I have selfishly made my existence necessary to your happiness."

"How strangely you talk, dear Arnod! Who in the village is stronger and healthier than you?

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You feared no danger when you were a soldier; what danger do you fear as a villager of Meduegna?"

"It haunts me, Nina."

"But, Arnod, you were sad before you thought of loving me. Did you then fear to die?"

"Ah, Nina, it is something worse than death;" and his vigorous frame shook with agony.

"Arnod, I conjure you, tell me."

"It was in Cossova this fate befell me. Here we have hitherto escaped the terrible scourge. But there they died, and the dead visited the living. I experienced a first frightful visitation, and I fled, but not till I had sought his grave, and exacted the dread expiation from the vampyr."

Nina uttered a piercing cry, and fell senseless. Afterwards, they found a consolation in the length of time, now months, that had elapsed, since Arnod had left Cossova, during which no fearful visitant had again approached him; and they fondly began to hope *that* gave them security. For the poor girl well knew from many a village tale the danger to which Arnod had been exposed.

It is a strange world. The ills we fear often never befall us; the blows that reach us are for the most part unforeseen ones. One day, about a week after this conversation, Arnod missed his footing and fell from the top of his loaded hay-wagon. He was picked up stunned and insensible. They carried him home; where, after lingering some hours, he died; was buried; but *not* forgotten.

Twenty or thirty days after his decease, says the perfectly authenticated report of these transactions, several in the neighborhood made complaints that they had been haunted by the deceased Arnod: and four of the number (among whom, there being nothing in the report to the contrary, I am afraid we may include poor Nina) died. To put a term to this fearful evil, the villagers were advised by their heyduke, who had had before some experience in such matters, to disinter the body of Arnod Paole. This step was accordingly taken *forty days after his burial*.

"The body," says the report, "was found in a perfectly fresh state, with no sign of decomposition. Fresh blood had recently escaped from its mouth, with which its shirt was wet. The skin (the epidermis, no doubt) had separated together with the nails, and there were new skin and nails underneath. As it was perfectly clear from these signs that he was a vampyr, conformably to the use established in such cases, they drove a stake through his heart.

"Whereupon he gave an audible groan, and a quantity of blood flowed from him. The same day his body was burned to ashes, which were returned to the grave."

The authorities further staked and burned the bodies of the four others, who were supposed to have been infected by Arnod; but no mention is made of the condition in which they were found.

The adoption of this decisive measure did not, however, entirely extinguish the evil, which continued still to hang about the village. About five years afterwards it had again become rife and very prevalent, and many again died of it. Whereupon, the authorities determined to make a general clearance of the vampyrs in the churchyard of Meduegna, and for that purpose they had all the graves to which suspicion was directed, opened, and their contents dealt with conformably to the state in which they were found, of which the following is the medical report, here and there *abridged* only:

1. A woman of the name of Stana, 20 years of

age, who had died 3 months before of a 3 days' illness following her confinement. She had before her death avowed that she had anointed herself with the blood of a vampyr, to liberate herself from his persecution. Nevertheless, she as well as her infant, whose body through careless interment had been half-eaten by dogs, both had died. Her body was entirely free from decomposition. On opening it, the chest was found full of recently effused blood. The heart and blood-vessels contained no coagulated blood, and the bowels had exactly the appearances of sound health. The skin and nails of the hands and feet were loose and came off, but underneath lay new skin and nails.

2. A woman of the name of Miliza, who had died at the end of a 3 months' illness. The body had been buried 90 and odd days. In the chest was liquid blood. The viscera were as in the former instance. The body was declared by the heydukes who recognized it, to be in better condition and fatter than it had been in the woman's legitimate lifetime.

3. The body of a child of 8 years old, that had likewise been buried 90 days; it was in the vampyr condition.

4. The son of a heyduke, named Milloc, 16 years old. The body had lain in the grave 9 weeks. He had died after 3 days' indisposition, and was in the condition of a vampyr.

5. Joachim, likewise a heyduke's son, 17 years old. He had died after a 3 days' illness; had been buried 8 weeks and 4 days; was found in the vampyr state.

6. A woman of the name of Rusha, who had died of an illness of 10 days' duration, and had been buried 6 weeks, in whom likewise fresh blood was found in the chest.

[The reader will understand, that to see blood in the chest it is first necessary to *cut* the chest open.]

7. The body of a girl 10 years of age, who had died 2 months before. It was likewise in the vampyr state, perfectly undecomposed, with blood in the chest.

8. The body of the wife of one Hadnuck, buried 7 weeks before; and that of her infant, 8 weeks old, buried only 21 days. They were both in a state of decomposition, though buried in the same ground, and closely adjoining the others.

9. A servant of the heyduke of the place, by name Rhade, 23 years old; he had died after an illness of 3 months' duration, and the body had been buried 5 weeks. It was in a state of decomposition.

11. The body of the heyduke Stanco, 60 years of age, who had died six weeks before; there was much blood and other fluid in the chest and abdomen, and the body was in the vampyr condition.

12. Milloc, a heyduke, 25 years old. The body had been in the earth 6 weeks. It was in the perfect vampyr condition.

13. Stanjolka, the wife of a heyduke, 20 years old; had died after an illness of three days, and had been buried 18 days. The countenance was florid, and of a high color. There was blood in the chest and in the heart. The viscera were perfectly sound. The skin remarkably fresh.

The document which gives these particulars is signed by three regimental surgeons, and formally countersigned by the lieutenant-colonel and a sub-lieutenant; it bears the date of June 7, 1732, Meduegna, near Belgrade. No doubt can be entertained of its authenticity, nor of its *general* fidelity; the less so, that it does not stand alone, but is supported

by heaps of parallel evidence, only less rigorously verifiable. It appears to me to establish beyond a question, that, where the fear and belief of vampyrism is prevailing, and there occur several deaths after short illnesses, the bodies, when disinterred, weeks after burial, present the appearance of corpses from which life has only recently departed.

What inference shall we draw from this fact?—that vampyrism is true in the popular sense, and that these fresh-looking and well-conditioned corpses had some mysterious way of preternaturally nourishing themselves? That would be to adopt, not to solve the superstition. Let us content ourselves for the present with a notion less monstrous, but still startling enough. That the bodies, which were found in the so-called vampyr state, instead of being in a new and mystical condition, were simply alive in the common way; that, in short, they were the bodies of persons who had been buried alive; and whose life was only extinguished by the ignorance and barbarity of those who disinterred them. In the following sketch of a similar scene to that above described, the truth of this inference comes out with terrific force and vividness.

Erasmus Francisci, in his remarks upon the description of the Archdukedom of Krain, by Valvasor, speaks of a man of the name of Grando, in the district of Kring, who died, was buried, and became a vampyr, and as such was exhumed for the purpose of having a stake thrust through him.

"When they opened his grave, after he had been long buried, his face was found with a color, and his features made natural sorts of movements, as if the dead man smiled. He even opened his mouth, as if he would inhale fresh air. They held the crucifix before him, and called in a loud voice, 'See, this is Jesus Christ who redeemed your soul from hell, and died for you.' After the sound had acted on his organs of hearing, and he had connected, perhaps, some ideas with it, tears began to flow from the dead man's eyes. Finally, when, after a short prayer for his poor soul, they proceeded to hack off his head, the corpse uttered a screech, and turned and rolled just as if it had been alive, and the grave was full of blood."

Alive, then, the bodies surely were. And it is from this position, as a starting point, that we must follow and unravel the whole mystery, *if we dare*.

Not that there is any particular virulence in this superstition, but that all superstitions are awkward things to deal with. They have their own laws, and run through definite stages, but always menace those who meddle with them. A superstition waxes and flourishes—that is its first stage; it then wanes in public opinion, is discredited, and is declared obsolete; that is stage the second. Eventually comes more enlightenment; its wonders are again admitted, but explained; the false in it separated from the true; this is its third and last period. And it may be remarked, that society is never safe against the reproduction of a superstition, till it has gone through this third stage (analogous to the disinterment and dissection of a vampyr); till then, it is always capable of "walking" again. But, which is singular, to the end the operation of explaining a superstition is unsafe, that is to say, if you step a quarter of an inch before the sagacious nose of the public. Of course, if any one should attempt to explain away a flourishing superstition, he would encounter, not martyrdom, perhaps, any more, but the persecution of opinion certainly, and the ban of society. But if he ventures upon the same process, even with one

that is already put down, he is liable to be viewed and attacked as a credulous person, disposed to revive forgotten rubbish; for he has unwittingly affronted public opinion by asserting that to be worth examining, which society had proclaimed an error. Doubly wo to him if his explanation contains some startling novelty! But courage! again,—

The bodies disinterred and found in the so-called vampyr state, were then alive.

But how could they, you ask, be alive after an interment of days or weeks? How is it possible they could lie without air, boxed up in a manner which would certainly kill a strong and healthy person in a few minutes or hours, and yet retain their vitality? I will not bring forward as favorable cases in point, the instances of frogs and toads that have been discovered in rocks, where they must have been encased for years or centuries, alive. First, because, although they are true, you might equally question these; secondly, because a human being cannot compete in vitality with a cold-blooded reptile. I shall content myself with falling back upon the evidence already adduced. The disinterred bodies *proved*, by their appearance, some even by their behavior, that they were alive; and I shall retort upon you the question, how came you not to know that bodies could live under such circumstances a considerable length of time, and that many cases have transpired in which, totally *apart from vampyrism*, bodies have been found turned over in the coffin, through efforts made by them, when, after their burial, they had unhappily recovered consciousness?

But what, then, was the pathological condition in which these persons continued to exist, after they had ceased to appear alive?

It is just one of the profitable results of examining the superstition before us, that the above question becomes explicitly propounded, and its solution demanded of physiologists. Its solution cannot fail of being full of interest, but it is yet, unluckily, a desideratum, or, like the principle which gives motion to the divining rod, as yet only indicated and partially outlined.

What is wanted is direct scientific examination, and verification by competent persons, of all the phenomena the body presents in these strange circumstances. In the absence, however, of recorded observation, let us imagine how the thing might come about.

The series of effects surmised would not begin in the heart; analogy leads us to suppose that primary interruption of the heart's action for a very brief period is fatal. Somewhere in the Indian seas, death is inflicted by a backward blow with the elbow on the region of the heart; a sudden angina is produced, which is promptly fatal. Neither, upon similar showing, can it commence in obstructed breathing. Then the commencement of the changes must be sought in the brain. Now it is analogically by no means very improbable, that the functions of the nervous system admit of being brought to a complete stand-still, the wheels of the machinery locking, as it were, of a sudden, through some influence directly exerted upon it, and that this state of interrupted function should continue for a very considerable period, without loss of power of recovery. Nor would it be contrary to analogy that such an arrest of activity in the nervous system should stop, more or less completely, the act of breathing and the action of the heart, without at the same time the consequences following which result from either of these changes, *when they are primary*. The heart,

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when *not acting by order*, need not be supposed to lose its contractile force and tendency. The blood, though not moving, being in contact with living vessels, need not coagulate. There is no physiological absurdity in supposing such a general arrest of function, originating in the nervous system, and continuing an indefinite period without life being extinguished. If a swimmer be taken with cramp and sink, he is irretrievably dead in five minutes. But if he sink from a fit of epilepsy, he may remain a longer time under water, yet recover. But epilepsy is a form of loss of consciousness beginning in the nervous system—a kind of fit which may, under certain circumstances, be thus preservative of life. So may we presume, that in the singular cases we are considering, the body is but in another and deeper fit, which suspends the vital phenomena, and reduces its vitality to that of the unincubated egg, to simple life, without change, without waste or renewal. The body does not putrefy, because it is alive; it does not waste or require nourishment, because every action is stilled within it.

But this must be a dull subject of speculation for you, and your mind is perhaps wandering thence to more practical views. It has struck you possibly, not without an uncomfortable misgiving, that this obscure, but unpleasant event may happen to yourself, and what on earth is there to prevent your being buried alive?

If you wish individually to be as safe as possible, leave by will to some eminent surgeon, not your habitual attendant, £50, and his railway expenses, &c., to be paid him for opening your body, when you are certainly dead; £25 if he opens you, finds you alive, and succeeds in sewing you up, and keeping you so; £200, on the contrary, to be expended in indicting him for manslaughter if you die under his hands. I do not venture to affirm that with all these precautions you would be perfectly safe. The eminent Vesalius, surgeon, and a favorite of the emperor Charles V., with all his experience and knowledge, was unlucky enough to open a Spanish nobleman by mistake, while he was yet alive. The consequences, no doubt, were more serious than they would be now. Vesalius hardly escaped the claws of the inquisition, and died during his expiatory pilgrimage to the Holy Land.

If, more comprehensively, you should wish to save others, as well as yourself, from this awful risk, and have a friend in the legislature, urge him, or otherwise Mr. Wakley, to move for the insertion in any convenient bill a clause to appoint in every district a qualified officer to license burials; he had better not be a practising doctor, but his office might embrace necropsy inquiries for the coroner, and the registrarship of births and deaths.

In either case, I would recommend you to offer publicly a premium of £500, to be paid at the expiration of three years, for the best treatise upon the signs of death; the same being calculated to form a useful body of instruction, as yet wanting, either for your private surgeon, or the new officials.

In England, indeed, our decent respect for the dead, which leads us to postpone interment as long as possible, is a tolerable security against being buried alive. The coffin is seldom closed upon the remains, before decomposition has already commenced. That is death's certain seal; nor, in the present state of our knowledge, special cases of course excepted, is it right to consider life surely extinct, till the impress of that seal is perceptible to the senses.

On the continent, generally, the interval observed

before burial is far too short for safety. They calculate that in France from twenty to thirty are annually interred alive, computing from the number of those who, after supposed death, come to life before the funeral is completed. I cannot help imagining that this seeming death must be much less frequent in England than in some other countries; (is that owing to the more vigorous practice for which English medical men are celebrated—they either cure or kill?) In Germany, interment is forbidden by law for three days after death. And there is a curious and humane provision in the grave-houses attached to the cemeteries of some of the principal towns: Bodies which are brought too soon, not having performed the three days' quarantine, are received and lodged, being disposed upon tressels, with rings on their toes and fingers which are attached to bell-pulls. The corpse thus, on coming to itself, may have immediate attendance merely by ringing for it; some one is always there on the watch. But the humanity of this arrangement, though perfect as long as it lasts, is finite in duration. As soon as the seventy-two hours prescribed by law are expired, it is another thing. The body is then legally dead, and must comport itself accordingly. At any rate, it is at its own risk if it behaves otherwise than as a corpse, and gives itself any airs of vitality. This is appalling enough, and would certainly justify any body, if it could, in getting out at nights and turning vampyr.

And now, to return again to our inquiry. We have got thus far. The bodies found in the so-called vampyr state are alive. They are in a sort of fit, the possible duration of which is undetermined. The same fit may occur, and does occur continually, with no reference to the superstition of vampyrism. But where the belief in vampyrism is rife, these fits are more prevalent, and spread sometimes like an epidemic.

The question naturally follows, how is this malady, viewing it as one in these cases, propagated?

At such seasons, it is far from improbable that there is some physical cause in operation, some meteorological influence perhaps, electrical or otherwise, disposing the system to be a readier prey to the seizure. As certain constitutions of the year alter the blood and lead to fever or cholera, why should not others render the nervous system irritable and prone to derangement?

Then it is well known that fright will bring on certain kinds of fits—in women hysterical fits, in the youth of either sex epileptic fits; and certainly no ghastlier terror can there be than the accredited apprehension of vampyrism. And it deserves remark, that impressions upon the mind are known to be capable of shaping particular kinds of fits, and especially of exciting and determining the features of sensorial illusions, that seem adjuvants in vampyrism.

We are able to creep yet a step nearer to the mark. There is great reason to believe that some human beings have had the power of throwing themselves into the state of seeming death, *voluntarily*. In Gooch's surgical works, there is an account of a Colonel Townsend, who asserted this of himself, and challenged Gooch to witness the performance. And you may read in the narrative of Gooch, how he and two or three other competent witnesses saw Colonel Townsend dispose himself to favor the invasion of this fit, and how he gradually fell into a state apparently devoid of animation. A very few years ago there was a story in the papers of a native in India, who undertook for a reward to

do the same feat, and to allow himself to be buried for a stipulated period. A gentleman, certainly not of a credulous turn in general, told me he was in India at the time with his regiment; and, though not on the spot, that he knew the parties who brought the conjurer to work; and that he believed they positively buried him, and, at the end of the time agreed upon, disinterred him, and found him alive. But be this story true or false, the case of Colonel Townsend remains to show the thing asserted to have been possible—and this remark may be safely added: Whatever change of the kind the will can bring about, can be twice as readily wrought by fear or a disturbed imagination.

You are, I hope, or fear rather, by this time satisfied with the marvellous and with the subject. What!—yet another question? Ay. How came this superstition to arise?

The answer is ready. In those days the belief in ghosts was absolute, and a vampyr was a sort of ghost. When an ignorant person, that is, when any one in those days became the subject of a sensorial illusion representing a human being, to a certainty he identified the creation of his fancy as somebody he had seen or heard of; then he would tell his acquaintances that the ghost of such a person haunted him. If the fright brought on a fit, or seemed to cause his death, the neighbors would remember how he had before been haunted. Then, in any case, what more natural than to disinter the body of a supposed visitant, to know why he is unquiet in the grave? Then, if once a body so disinterred were found in the fresh and undecomposed state, the whole delusion would start into existence. The violence used would force blood from the corpse; and that would be construed into the blood of a victim. The absence of a scar on the throat of the victim, would throw no difficulty in the way to the vampyr theory, because vampyrs enjoyed the ghostly character, and all its privileges. Supposing, again, that at any time chance had brought to light a body interred alive, and lying still in this fit, the whole yarn of superstition might again have been spun from that clue.

Do you want more than this? I shall begin to think you at heart superstitious. I tell you it is contrary to the rules of inductive logic, to look for, or to use more principles than are sufficient for the reasonable explanation of phenomena. Yet you urge, do you, that it is no less unphilosophical, in an obscure and unsettled inquiry, wholly to exclude the consideration of unlikely possibilities?—Well! it is nothing to me. Have it your own way; suppose, if you like, that the man in the grave *had* something to do with spreading the disease, and that his nervous system, in its abnormal state, could put itself in relation with that of another person at a distance. If you like it, have it so. In one sense, it simplifies the matter. But though I cannot deny your supposition to be possible, you will excuse me if I profess to hold the solution, which I have myself given, to be sufficient.

Well! there is an end of the subject, at all events; and I accept your thanks for having told you all I know about vampyrism. I deserve them more than you are aware. At the churchyard in Meduegna, my dear Archy, I had you thoroughly in my power. I saw how your curiosity was raised, and that any picture I had drawn would have been accepted by you with avidity; and I must confess it did at one moment occur to me, to describe to you the exact dress and deportment of the three regimental surgeons, or Feldscherers, (a handsome word signifying

field-barbers,) John Flickinger, Isaac Stegel, and John Fredrich Baumgartner, as well as the behavior and remarks of a drummer boy, who held the instrument case during the *intermortem* examination, an event he witnessed for the first time. But I would not abuse my advantage; so I let you off cheaply with the sole fabrication of Nina, and the personal characteristics of Arnod Paole, of whom unfortunately nothing has come down to posterity, but that he was haunted by a vampyr at Cossova, fell from a haycart at Meduegna, and died, and lived a vampyr himself.

I remain, dear Archy,  
Yours, &c.  
MAC DAVUS.

#### LETTER III.—SPIRITS, GOBLINS, GHOSTS.

DEAR ARCHY.—On what subject shall I next address you? Elves, goblins, ghosts, real and unreal; dreams, witchcraft, second-sight? Bless me! the field of marvels seems more thronged, as I approach it closer. The spirits I have evoked begin to scare me with their numbers. How on earth shall I ever get them fairly laid? But some, I see, can now only limp along—they are scorched already; I will begin with finishing these. Yet they deserve gentle treatment. They sprang from our nature, which seems expressly made to procreate and rear them. Thick, within and around us, lie the rich veins of illusive suggestion from which they spring.

The thing nearest us is our mental constitution, the world of consciousness. It is of it we first learn, though it be the last we understand. It is that through which we perceive and apprehend all other things; and nothing becomes part of our knowledge but as it has been shaped and colored by its magic reflection. Nay, more, it is not only our mirror but our archetype for everything. So we spiritualize the material universe, and afterwards, by an incongruous consistency, anthropomorphize spirit.

Reason in vain declaims against this misuse of analogy. Feeling, imagination, instinct are too many for her; and any mood, from fun to earnest, from nonsense to sublimity, may hear a responsive note when this chord is touched.

Address to that ingenuous young American a remark upon the slightness of the legs of her work-table—she blushes—her lively fancy has given them personality. Were she a wealthier miss, she would give them, besides, neat cambric trowsers with lace borders. With less refinement, and with inexcusable warmth, I take shame to myself for having bestowed a kick upon a similar mahogany limb, which had, however, begun the contest by breaking my shin.

To the poet's eye, nature is instinct with life. Greece may be “living Greece no more”—in the soul of her people; but her immortal plains, and streams, and hills have their own vitality.

“The mountains look on Marathon,  
And Marathon looks on the sea.”

You go to visit them; they meet you half-way: “spectatum veniunt.”

Amid the Alps—with glacier, torrent, forest around—you still evoke the fancied spirit of the scene, though it be but

“To gaze upon her beauty—nothing more.”

And where, in sublimer grandeur, snowclad, upreared against the nearer sun, are seen the towering Andes; to the poet's eye, the Cordillera lies no

huge backbone of earth; but lives, a Rhoetus or Enceladus of the West, and

"over earth, air, wave,  
Glares with his Titan eye."

This is but the calm, the dignified, the measured march of poetical conception. No wonder, when superstition steps in to prick on imagination, that all should vividly teem with spirit life. Or that on Walpurgis' night, bush and streamlet and hill bustle and hurry, with unequal pace, towards the haunted Brocken: the heavy ones lag, indeed, a little, and are out of breath—

"The giant-snouted crags, ho! ho!  
How they snort and how they blow!"

No wonder that to the dreamer's eye, in tranquil scenes of sylvan solitude, the fawn of yore skipped in the forest dell, the dryad peeped from behind the shadowy oak, the fay tripped lightly over the moonlit sward.

But enough, and too much, of "your philosophy." Yet there are those still who may be the wiser for it. Let me sketch you a surviving believer in the creed it would dispel.

He was a Spanish West-Indian—in his active years had been an extensive planter and slave-owner in Porto Rico. His manners were grave and dignified, as due to himself; courteous, as not denying equal or superior worth in others. He had seen the world, and spoke of it habitually with a fine irony. We had many a walk together. He was nervous about his health. One day, as our path lay along the banks of the Rhine, his conversation took this turn:—

"Do you believe in spirits?" he asked me; and upon my intimating the polite but qualified assent which suited the tone in which the question was put—"It may be superstition," he continued, "but I am often inclined to think that the pucks and goblins, which, as they say, once haunted these scenes, are not entirely visionary beings. You may smile—but this has happened, nay, often happens, to me in my walks. I see a big clod lying before me in the path, and form the intention of avoiding it; when close to it, I step to one side, when pr-r-rt, my toe strikes against it."

I edged slightly away from my companion with the disagreeable impression that he was gone mad.

He went on:—"When I lived in the West Indies, the children of the slaves, about my house, were treated with great kindness and indulgence. They would come about my table at dessert, and often had little presents given them. So they grew into objects of affection. But, out of several, some, of course, took ill and died. I cannot tell you what grief it caused me. Then this has happened several times, after the death of one or other of my little favorites:—a bird has flown into the hall, and into my sitting-room, and has hovered near me, and, after a while, has flown away. For a few days it has regularly returned, and then finally disappeared. I thought it was tenanted by the spirit of my lost favorite, which had come to bid me farewell."

I drew nearer again to my companion: I felt I was at all events safe from violence from him. And I contrasted, with humiliation, this beautiful superstition with the commonplace remembrance of a school-boy conviction of my own, one dark night, upon Blackheath, that a direction-post was a ghost.

My friend had not, indeed, always been a dreamer; and although this is no place to narrate his course of daring and hazardous adventure, on which

I am therefore silent, yet I wish to be allowed to reestablish his credit for intelligence, by reporting the answer which he made, on another occasion, to a question, as to what he thought of the emancipation of the negroes in our colonies. "The principle," answered my friend, "was good, but you were in too great a hurry. Before giving them freedom, you should have made them fit for it. They were not impatient. Slavery is an African institution. Some outlay of public money, and extreme care and prudence in your measures, would have enabled you to secure their humane treatment in the interval. As fast as they became inoculated with the wants and habits of civilized life, you might have made *freedom* of the most advanced, and given them official occupation, or allotted them land under proper conditions. One sheep would have followed another. The fag-end you might have emancipated together. Thirty or forty years, and a million of money, would have done the thing. The results would have been, from first to last, beneficial to the colonists. It would have set an example which other nations *could* have followed. It would have been a noble return for having, temporarily, used the race as unmitigated slaves. It would have been an act of enlightened philanthropy. It would have become statesmen. What you did reads and works like the puerile suggestion of a school-boy's theme. What you are further doing, to suppress, by force, the trade in slaves, would have been worthy my distinguished countryman whose biography has immortalized Cervantes. Humanity would smile at it, but that she shudders and sickens."

But to leave the region of dreams, which are no longer realizable, let us shift the scene.

The churchyard has its nightly terrors. One heard of corpse-lights seen dancing over graves—but over some alone. A few only had witnessed this; but *they* had no doubt on the matter. Things looked "uncanny," but time did not pause, and the story was forgotten. Even when the tale was fresh, what was it but superstition? Who of those who hugged its sympathetic terrors by the Christmas fireside, thought they could be true on the bright frosty morning of the morrow? It was mere fancy. There was nothing in it. Yet there *was* something. And now and then a striking and mysterious event would occur to bring back the old idea. There was a cottage, (this I heard of a certainty,) in a hamlet I could name, to which a bad report attached. A room in it was haunted. More than one who had slept there had seen, at midnight, the luminous apparition of a little child standing upon the hearth-stone. At length suspicion became active. The hearth-stone was raised, and there were found, buried beneath it, the remains of an infant. A story was now divulged, how the former tenant and a female of the neighborhood had, a very few years before, abruptly left the village. The apparition here was real and significant enough.

"It will have blood, they say; blood will have blood."

Stones have been known to move, and trees to speak:

Augurs and understood relations have,  
By magot-pyes, and choughs, and rooks, brought  
forth  
The secret'st man of blood."

But tales like these, though true, gradually lose the sharpness of their evidence for want of an accredited contemporary narrator, and so become valueless. But time brings round everything.

And at length a marvellous narrative, to the same effect with the above, made its appearance in a trustworthy German work, *P. Kieffer's Archives*, the complete authentication of which caused it to make a deep impression. The narrative was communicated by Herr Ehrman, of Strasburg, the son-in-law of the well-known German writer Pfeffel, from whom he received it.

The ghost-seer was a young candidate for orders, eighteen years of age, of the name of Billing. He was known to have very excitable nerves—had already experienced sensorial illusions, and was particularly sensitive to the presence of human remains, which made him tremble and shudder in all his limbs. Pfeffel, being blind, was accustomed to take the arm of this young man, and they walked thus together in Pfeffel's garden, near Colmar. At one spot in the garden Pfeffel remarked, that his companion's arm gave a sudden start, as if he had received an electric shock. Being asked what was the matter, Billing replied, "nothing." But on their going over the same spot again, the same effect recurred. The young man being pressed to explain the cause of his disturbance, avowed that it arose from a peculiar sensation which he always experienced when in the vicinity of human remains; that it was his impression a human body must be interred there; but that if Pfeffel would return with him at night, he should be able to speak with more confidence. Accordingly, they went to the garden together when it was dark, and as they approached the spot, Billing observed a faint light over it. At two paces from it, he stopped and would go no further; for he saw hovering over it, or self-supported in the air, its feet only a few inches from the ground, a luminous female figure, nearly five feet high, with the right arm folded on her breast, the left hanging by her side. When Pfeffel himself stepped forward and placed himself about where the figure was, Billing said it was now on his right hand, now on his left, now behind, now before him. When Pfeffel cut the air with his stick, it seemed as if it went through and divided a light flame, which then united again. The visit, repeated the next night, in company with some of Pfeffel's relatives, gave the same result. They did not see anything. Pfeffel, then, unknown to the ghost-seer, had the ground dug up, when there was found at some depth, beneath a layer of quicklime, a decomposing human body. The remains were removed, and the earth carefully replaced. Three days afterwards, Billing, from whom this whole proceeding had been kept concealed, was again led to the spot by Pfeffel. He walked over it now without experiencing any unusual impression whatever.

This extraordinary phenomenon, it is now generally known, has been completely elucidated through the discoveries of Von Reichenbach, to which, in a former letter, I had occasion to make allusion.

You are probably aware, that the individuals whose nerves Von Reichenbach found to be so sensitive to the proximity of crystals, magnets, &c., would, in the dark, see flames issuing from the same substances. Then, in the progress of his inquiries, Von Reichenbach found that chemical decomposition was a rich source of the new power he had discovered, by its action on the nerves. And being acquainted with the story of the ghost in Pfeffel's garden at Colmar, it occurred to him as not unlikely, that Billing had just been in the same condition with his own sensitive patients, and that graves very likely would present to all of them a

luminous *aura*; and that thus the mystery might find a very simple explanation.

Accordingly, Miss Reichel, one of his most sensitive subjects, was taken at night to an extensive burying-ground, near Vienna, where many interments take place daily, and there were some thousand graves. The result did not disappoint Von Reichenbach's expectations. Whithersoever Miss Reichel turned her eyes, she saw masses of flame. This appearance manifested itself most about recent graves. About very old ones it was not visible. She described the appearance as resembling less bright flame than fiery vapor, something between fog and flame. In several instances, the light extended four feet in height above the ground. When Miss Reichel placed her hand in it, it seemed to her involved in a cloud of fire. When she stood in it, it came up to her throat. She expressed no alarm, being accustomed to the appearance.

The mystery has thus been entirely solved. For it is evident that the spectral character of the luminous apparition in the two instances I have narrated had been supplied by the imagination of the seers. So the superstition has vanished, leaving, as is usual, a very respectable truth behind it.

It is indeed a little unlucky for this new truth, which reveals either a new power in nature or an unexpected operation of familiar ones, that the phenomena which attest it are verifiable by a few only who are possessed of highly sensitive temperaments. And it is the use of the world to look upon these few as very suspicious subjects. This is unjust. Their evidence, the parties having otherwise a character for honesty, should be accepted with the same faith and the same distrust with which all evidence is to be viewed; with neither more nor less than in other cases. Nothing should be received in scientific inquiry which it is not compulsory on our understanding to believe. It is not a whit more difficult in these than in other cases to obtain inductive certainty. Nature is not here peculiarly coy or averse from being interrogated.

Philosophers occasionally regret the limited number of their senses, and think a world of knowledge would flow from their possessing but one more. Now, persons of highly-wrought nervous systems have what is equivalent to a new sense, in their augmentation of natural sensibility. But philosophers will not accept this equivalent. They must have the boon from nature their own way, or not at all.

To turn elsewhere.—We may now look into a broader stream of illusive power—one which lies entirely within ourselves, and needs no objective influence to bring its ghost-producing fertility into play. Let me exemplify it in operation.

A young gentleman, who has recently left Oxford, told me, that he was one evening at a supper-party in college, when they were joined by a common friend on his return from hunting. They expected him, but were struck with his appearance. He was pale and agitated. On questioning him, they learned the cause. During the latter part of his ride home, he had been accompanied by a horseman, who kept exact pace with him, the rider and the horse being facsimiles of himself and the steed he rode, even to the copy of a newfangled bit he sported that day for the first time. The apparition vanished on his entering the town. He had, in fact, seen his double or fetch, and it had shaken his nerves pretty considerably. His friends advised him to consult the college tutor, who failed not to give him some good advice, and hoped the warning

would not be thrown away. My informant, who thought the whole matter very serious, and was disposed to believe the unearthly visit to have been no idle one, added, that it *had* made the ghost-seer, for the time at all events, a wiser and better man.

In more ignorant times, the appearance of one's fetch was held to be of very alarming import, and to menace either death or serious personal harm. Now, it is known to be one of the commonest forms in which *sensorial illusions* shape themselves. And these are matters of every day occurrence.

It would seem, that when the blood is heated or the nervous system overstrained, we are liable to attach reality to the mere productions of imagination. There must be few who have not had personal experience of this affection. In the first night of a febrile attack, and often in the progress of fever, the bed-hangings appear to the patient swarming with human faces, generally of a disagreeable and menacing expression. With some, opium will produce a host of similar visitants. In much illness, I have often myself taken this drug, and always hoped it would provide me a crop of apparitions that I might analyze. But I was disappointed; opium I found to give me only a great tranquillity and clearness of thought. Once or twice only have I had a vision, and that but a transitory landscape. I used in vain to look upon that *black mixture* which lies before one in the dark, and try to make its fragmentary lights arrange themselves into definite shapes. And I have imaged to my mind familiar scenes of faces, (as in the daytime a strong conception will half realize such,) but they were not more distinct then than formerly—ideas only and perfectly transient. But, as I have said, once or twice I have had the satisfaction of seeing a bright and colored landscape spread before my view; yet unlike reality, and more resembling a diorama, occupying a rectangle on the black mixture before my eyes. It was not a known and familiar scene, but a brilliant sketch, made out of materials I remembered, but could not by a deliberate effort *have combined* so effectively. It was a spontaneous throw of the imagination, which had force to overspread the organs of perception.

How well did Shakespeare understand this creative power of the fancy!—the air-drawn dagger of Macbeth, and his test—“Come, let me clutch thee!” are physiologically perfect. Nor less perfect or true to nature, is the conception of the ghost of Banquo haunting the kingly murderer. The ghost, it is obvious, however, should not in the play appear bodily. The audience are in the position of the guests at the royal supper-table, who saw it not. I wonder how in Shakspeare's time the stage-directions ran upon this point. Probably as now. Though Shakspeare wrote for all times, he was probably wise enough to act for the present. Or perhaps, with no disrespect to his unequalled genius, he understood not the principles of which he exactly portrayed the workings, and was, like Shelley's poet,

“Hidden in the light of thought.”

So, some say the sun may be dark as another planet; and that the spots on it are its common earth seen through the gaps in its luminous atmosphere.

To the world, the alpha and omega of this piece of philosophy were furnished by the publication of the case of Nicolai, the bookseller of Berlin. Its details were read before the Academy of Sciences at Berlin, in 1799. The *substance* ran thus. Nicolai had had some family troubles which much an-

noyed him. Then, on the 21st of February, 1791, there stood before him, at the distance of ten paces, the ghost of his eldest son. He pointed at it, directing his wife to look. She saw it not, and tried to convince him that it was an illusion. In a quarter of an hour it vanished. In the afternoon, at four o'clock, it came again. Nicolai was alone. He went to his wife's room—the ghost followed him. About six other apparitions joined the first, and they walked about, among, and through each other. After some days, the apparition of his son stayed away; but its place was filled with the figures of a number of persons, some known, some unknown to Nicolai—some of dead, others of living persons. The known ones were distant acquaintances only. The figures of none of Nicolai's habitual friends were there. The appearances were almost always human: exceptionally, a man on horseback, with dogs and birds, would present themselves. The apparitions came mostly after dinner, at the commencement of digestion. They were just like real persons; the coloring a thought fainter. The apparitions were equally distinct whether Nicolai was alone or in society, by day as in the dark, in his own house or those of others; but in the latter case they were less frequent, and they very seldom presented themselves in the streets. During the first eight days they seemed to take very little notice of each other, but walked about like people at a fair, only here and there communing with each other. They took no notice of Nicolai, or of his remarks about them to his wife and physician. No effort of his would dismiss them, or bring an absent one back. When he shut his eyes, they sometimes disappeared, sometimes remained; when he opened his eyes, they were there as before. After a week they became more numerous, and began to converse. They conversed with each other, and then addressed him. Their remarks were short and unconnected, but sensible and civil. His acquaintances inquired after his health, and expressed sympathy for him, and spoke in terms comforting him. The apparitions were most conversible when he was alone; nevertheless they mingled in the conversation when others were by, and their voices had the same sound as those of real persons. This illusion went on thus from the 24th of February to the 20th of April; so that Nicolai, who was in good bodily health, had time to become tranquillized about them, and to observe them at his ease. At last they rather amused him. Then the doctors thought of an efficient plan of treatment. They prescribed leeches: and then followed the *dénouement* to this interesting representation. The apparitions became pale and vanished. On the 20th of April, at the time of applying the leeches, Nicolai's room was full of figures moving about among each other. They first began to have a less lively motion; shortly afterwards their colors became paler—in another half hour fainter still, though the forms still remained. About seven o'clock in the evening, the figures had become colorless, and they moved scarcely at all, but their outline was still tolerably perfect. Gradually that became less and less defined. At last they disappeared, breaking into air, fragments only remaining, which at last all vanished. By eight o'clock all were gone, and Nicolai subsequently saw no more of them.

Other cases are on record in which there was still greater facility of ghost-production than Nicolai evinced. One patient could, for instance, by thinking of a person, summon his apparition to join the others. He could not, however, having done this,

subsequently banish him. The sight is the sense most easily and frequently tricked; next, the hearing. In some extraordinary cases the touch, also, has participated in the delusion.

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*Marriage*. A novel. By Miss Ferrier. Sir Walter Scott gave his emphatic commendation to the works of this writer, in the introduction to one of his own works. And the *Boston Post* has most unaccountably possessed itself of several opinions which we should naturally have expressed in con-

nection with the work. We copy what it says, feeling that we are very much in the same situation with the merchant member of Parliament, who, after hearing a speech from Mr. Burke, rose up and emphatically said, "Ditto to Mr. Burke."

" Glad are we to see this imitable book included in the Library of Select Novels. Glad are we that the good taste of the publishers has taken advantage of a short crop of spring fiction to issue one of the most natural pictures of real life ever produced. We trust it may be followed by 'Inheritance' and 'Destiny,' the only other works of its lamented author that we wot of. Nor are we content that the publishers should stop there. All of Galt's novels are out of print, and the cheap issuing of the *Entail*, *Annals of the Parish*, *Last of the Lairds*, *Provost Southeanax*, *Omen*, *Rotheslan*, *Eben Erskine*, and several smaller books, would not only pay well, but would be a real benefit to the reading community. Either of the above-named books, by Galt or Miss Ferrier, is worth heaps of what proceeds from James, Charlotte Bury, and even sometimes from Bulwer and Mrs. Gore. Galt, Miss Ferrier and Miss Austin, among English novelists, are the only late writers really worth naming with Walter Scott; and it is not too much to say that each one of the three surpasses the great magician himself in certain points, while all fall behind him in variety, comprehensiveness and universality. Miss Austin, we imagine, has had her full share of praise, but Galt and Miss Ferrier have unquestionably not received their deserts. We trust the time is coming when the simplicity, pathos, humor, power and perfect finish of their

pictures of Scottish life will be more generally appreciated."

FROM MESSRS. LITTLE & BROWN, BOSTON. *The American Loyalists, or Biographical Sketches of Adherents to the British Crown in the War of the Revolution; Alphabetically Arranged, with a Preliminary Historical Essay.* By Lorenzo Sabine.

How rich a field to the future novelists and poets, will be afforded by the unhappy dissenters, who, under the then opprobrious appellations of refugees, tories, or loyalists, would not unite with the general mass in extreme opposition to the authority of Great Britain.

The Scotch Jacobites have furnished many a choice theme, and are great favorites with the present generation, even of the firmest Hanoverians. It is almost time for our love of the picturesque and romantic to cause American republicans to look up the records of the opponents of their grandfathers, (or of their own grandfathers as the case often may be,) and see through what scenes of suffering they persevered in their wicked, or conscientious, opposition. Indeed, as the matter is all settled now, it can do no harm to listen to reason, and see what were the foundations of their opinions.

This is a handsome octavo volume, and can hardly fail to prove a valuable addition to the materials of the future historian, or an interesting collection of narratives for the present reader.

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